

THE
SOUTHERN AGRICULTURIST.
NOVEMBER, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*On the Culture of Clover and Cotton*; by JOHN E. CALHOUN.

“Pendleton, August, 1831.

I HAVE been unpardonably negligent in not replying to yours dated some time back; various occupations, and the usual disposition to procrastinate, added to a great aversion to writing, and a still greater to appearing in print, must plead my excuse. All of which you will say, is fudge. Be it so.

You request that I will give the result of my experiments in the culture of clover. The time of sowing, preparation of land, product, and number of cuttings obtained in the season, also its duration, &c.

I think the beginning of October the best time for sowing the seed, as the plant will take sufficient root during the winter to give it an early start in the spring, and enable it to stand the heat of the sun of the following summer.

The land should be rich, or made so by manure. I would prefer the north slope of a hill, or a piece of pretty good land, near a water course, for an experiment. It should be ploughed very deep, two or three times if necessary, or until the ground is perfectly mellow, and thoroughly pulverised. The seed should be mixed with a little earth, or ashes, that it may be sowed more regularly (about a gallon to the acre,) and brushed or harrowed in lightly. I prefer the former, as it leaves the ground more smooth and regular.

I cannot state accurately the product, by weight, having used mine, as yet principally for pasture, cutting only partially for seed.

If the season is wet, two cuttings may be obtained in the year; the first heavy, and the last light. As to its duration, I can as yet see no limit. That part which formed the subject of a former communication, is still growing finely, and I believe without diminution, if I had not pastured it too closely when young. The last spring, (so unusually backward, and all vegetation so completely checked, except the clover,) I was induced to suffer the milk cows, and mares, and colts, to run upon it too long for a good crop of hay; yet some has been obtained.

I am inclined to think that in our climate it may be continued almost any length of time, by giving it a top dressing of manure every spring, and keeping down noxious weeds. I find aridity its greatest enemy, being a very succulent plant it requires much moisture, therefore deep ploughing and manure, or land naturally rich, are essential to its successful cultivation. So little attention has been paid to the cultivation of grasses, with us, that it is thought that, that time is thrown away, which is devoted to this object, every farmer considering how he shall most easily destroy, rather than produce it. Hence the common practice of selecting a piece of ground, for this purpose, which is too poor to produce any thing, the surface is lightly scratched over, the seed scattered very carelessly, and as thin as possible, the object being to make the most of a little. The consequence is that the weeds get the start, the grass is only to be seen here and there, if at all, and the whole product as good a growth of weeds as the poor soil could produce by its own feeble effort. The experiment is abandoned, and it is thought impossible that the foreign grasses can be grown in our climate.

The late Judge Peters, well known as a practical farmer, justly said, in reply to a communication recommending a grass as growing well on poor land, "It could not be worth cultivating, as nothing good grew on poor land."

I am sorry to say that my experiment with the sugar cane, of which you inquire, has failed; the severity of the last winter destroyed the seed. This I regret, as the cane was obtained from the highest point on the Mississippi that it is cultivated, and would have been most likely to have succeeded here. I am by no means satisfied that it would not

have succeeded to a certain extent, if the seed had been preserved with more care. If molasses alone could be obtained, for plantation use, it would be worth the culture.

In a former letter you asked my opinion of the cause of rot in cotton. I have not been inattentive to the various theories advanced on the subject, but as yet have come to no settled conclusion, as to the true cause. The most commonly received opinions are, that it is produced by an insect, by atmospheric action, or defective seed. That it is caused by an insect I do not believe, but have long thought that the insect was the consequence, and not the cause of the disease. That it is the result of atmospheric action, my observation has not been sufficiently minute to detect. That it is in part owing to defective seed, I have little doubt; but that it is mainly caused by defective cultivation I am more inclined to believe.

Before the price of cotton advanced considerably, I am not aware that the disease existed; as soon, however, as it enhanced in value, and the cultivation became more extended, we heard of its ravages, first in Louisiana, where the most extensive cultivation commenced, and thence on to our own State; from which I infer, that as the quantity grown to the hand increased, so was the cultivation more negligent. Residing in a part of the State which has been thought uncongenial to the growth of cotton, believing that one acre well cultivated, was worth two that were otherwise, and that good cultivation, judiciously bestowed, would accelerate the growth of the plant, and overtake the season, I have planted much less to the hand than is usual. Practice being admitted to be better than theory, I will give you my mode of cultivation, with the result, from which you can draw your own conclusions.

As soon as my crop is housed, which is generally about Christmas, a large furrow is opened by a two horse bar-share, between the cotton rows; in this furrow the stalks are broken and laid on where there are poor spots; stable manure is hauled and distributed. This being done, throughout the field, the same kind of plough follows, and throws two furrows on the stalks and manure. In this situation it remains until about the last of March, when two more furrows are thrown, one from each side, on the same ridge.—About the middle of April, which is my time for planting, a trench is opened by a *bull-tongue* or *gofer* plough, about

five inches wide, in which the seed is drilled tolerably thick ; it is then covered by a board attached to a common shove stock, with a notch cut in the lower edge, directly over the seed, to prevent their removal. A roller made of a pine log, about one foot in diameter, embracing two ridges at a time, and drawn by shafts, completes the operation of planting. The last I consider of decided advantage ; cotton will come up several days sooner, stand better, and look much more healthy than when it is not rolled. I use a heavy roller always for my small grain, one that requires two good mules to draw. My rule is, in preparing for planting, to break the land as deep as a two horse bar-share can do it, turning under all the vegetable matter that may be on the surface : but in cultivating, to plough lightly, so as to disturb or expose the deposite as little as possible, to the action of the sun. I use an instrument which I call a scraper ; I believe it is something like what is called a buzzard plough in Georgia. It does the work of a hoe, by horse-power, and in such land as I cultivate (light isinglass river land) or loose upland, free from roots or stumps, is not surpassed by any implement that I have ever seen, for the neatness and expedition with which it operates. I use no other plough in my cotton fields, in an ordinary season. I think the perfection of cotton culture is in the hoe ; but if any other instrument is used, it should go merely deep enough to kill the grass. I have seen more cotton injured than benefited by ploughing too deep, and particularly late in the season.

Without going more into detail, the above is the course which I have pursued steadily for ten or twelve years. Now for the result. I make from 700 to 1000 lbs. of seed cotton per acre ; one field of 20 acres has failed but once in six years, to yield 1000 lbs., and one year it produced 1200 lbs. per acre. In the whole time mentioned, I do not believe that in any one year, I have lost a bale of cotton by *rot*.—When my neighbours lost from one half to two thirds of their cotton by rot, I had little or none. Mentioning my exemption some years back, when the rot was committing great ravages, it was thought remarkable, and many were desirous to try my seed, in hopes to avoid the evil ; but I have never heard, on trial, that it had any preference. I once sent a wagon load to Abbeville district, which was planted in common with a large crop to the hand ; it rotted excessive-

ly the first year, and was abandoned or mingled with the other seed.

I never plant from the first or last picking, in both of which there are a great deal of premature opened cotton, and defective seed.

It has been often said, that the black seed was less liable to rot than the green; may this not be owing to the neater and more careful cultivation of the hoe. I have never seen cotton worse rotted than the black seed, under bad cultivation; I doubt, therefore, whether it is less liable. It is an opinion of many practical farmers in this country, that blast in small grain is occasioned by seed cut before the grain is perfectly ripe. May not the rot be produced, as probably from the seed of cotton prematurely opened. In all the latter bolls near the top of the stalks, not more than half grown, and forced open after a frost, the seed is very defective, and I should suppose incapable of producing healthy, vigorous stalks.

I am glad to find that a spirit of inquiry is abroad, on the subject of grasses. There is no part of our system of husbandry more defective, and none more important. Nothing adds more to the comfort and independence of a farmer, than a plenty of fine, fat stock, which can only be obtained by attention to the cultivation of grasses.

With Mr. Parker, clover must succeed well. I have always thought his neighbourhood peculiarly well adapted to its growth. We have the supposed *gama grass* mentioned by Mr. Ellison, but it has not been attended to. Walking over a rice plantation on Cooper River, more than twelve months since, I observed, for the first time, its growth on the cross bank. It immediately occurred to me that it might be planted to advantage on the sides of the river banks, as giving strength and solidity to the loose soil of which they are composed. It has the strongest and most closely matted roots of any grass that I have seen; it is very hardy, and easily transplanted. When I first obtained it, I was pleased with its luxuriance, and the ease with which it might be extended, and wished to make a lot in my low grounds, but was deterred, from the formidable appearance of the roots, which I feared might, some day, give trouble to eradicate. This difficulty may easily be obviated in the rice lands, as water would soon destroy it.

I once thought of entering the list, and backing Colonel Simkins on the advantages of horizontal ploughing, in the controversy with Mr. Ellison; but as Falstaff's expression, that "discretion was the better part of valour," occurred to me, I desisted. I will not now *cross-furrow* and *gully* the fair work which has been accomplished, as it appears from Mr. Ellison's last communication, that their differences have been horizontalised.

Very respectfully, &c.

JOHN E. CALHOUN.

ART. II.—*On Manures*; by ARATOR.

"Georgia, 29th Aug. 1831.

Mr. Editor,—You will, I hope, excuse me for my long silence, knowing, as you do, that my disposition to give you useful communications is good, if I had ability to write to please the scholastic ear. My scruples, however, in offering this communication in my plain style, I partly get rid of, in the belief that the majority of your readers are as plain men as myself, and will probably read it with as much attention, (if the subject matter promises profit,) as they would even if written purely classical. The American Farmer, and the Southern Agriculturist, have done much good for our country, by their diffusion of agricultural knowledge, and it is a source of great pleasure to me to see the growing disposition manifesting itself in the Southern States, for the improvement of worn out lands, and the keeping alive those not yet exhausted, by the application of manures, mainly brought about by these agricultural periodicals. Not more than a dozen years back, cotton seed was the only manure that was thought worthy of being placed on land in this part of the country; now stable manure, and even compost, are thought to have value, and are applied to the land, to some extent, by most of our best farmers; but I apprehend the best mode of applying manure to the land,

to stimulate it to the largest product, and to be the most lasting in its benefits, is not yet well understood, generally, by our planters. I am led to this conclusion, from what I have seen and read on the subject, add to which, the experience I have had with manures, the twenty years that I have been a planter. I have applied to various qualities of soils, various kinds of manure, and in various ways. My first essay was in 1811, on one of our Sea-Islands, it being my first, and successful too, I trust I will be excused for describing it.

I had some mud taken from a salt mud flat, that was entirely free from grit, placed on the landing, where it remained several months. A short time before the usual time of planting, I had the mud and some dry marsh-grass hauled to a sterile spot of ground; the ground was marked off in rows, four feet a part, with a coulter-plough, on which I strewed the mud pretty thick; I then passed a shovel plough directly through the centre of the mud, which threw the mud each side of the shovel furrough. I then passed a mould-board plough on each side, the mould-board to it, thus forming a list or bed to plant the cotton on, and at the same time, incorporating the mud very completely with the earth. The dry marsh-grass was managed in the same way, and cotton planted alike on both pieces of ground, the product was vastly increased by the mud, and somewhat by the grass.

Circumstances put it out of my power to repeat my experiments the few years after that I planted on the salts; but very early after I removed to this place, where I have been able to give my own personal attention, to the operations of my plantation, I commenced experiments with manures, for the improvement of my exhausted lands, on which I had purchased a considerable quantity, and of all of the different ways that I have applied compost, stable manure or mud, I prefer to incorporate them with the earth, on the plan of my first experiment, whether for cotton or for corn. In a wet season, or a dry one, manure thus applied, will always reward the planter for the time, and expense it may cost. But not so, if the manure is applied in bulk, on top of the hill or under it, as is common with planters, for on either plan, both cotton and corn will fire in a dry season, and sustain injury, rather than benefit and furthermore, no benefit can be expected from manure thus applied, beyond one season. But I have found manure, incorporated with the earth in the drills, as I have before

described, extend its benefits for three years, managed thus : if for corn, and the ground has been planted the preceding year, in corn or cotton, cut down the old stalks any time in January or February, and pass a two horse shovel-plough through the centre of the old bed ; let it remain so for ten or twelve days, for the frost to act on it and pulverise it ; then run a two horse mould-board-plough on each side, the mould-board to it, and immediately preceding planting, open a drill in the list, with a two horse shovel-plough, in which plant the corn, and cover it lightly, by running what is called a bull tongue on each side. If you would plant in cotton, pursue the same method except as to the plough, to open the drill, and cover—make use of a bull-tongue to open the drill, and cover with a light five-tooth harrow.

Highly as cotton seed is prized in this country as a manure, I am of opinion that more than one half of the fertilizing properties of them is lost from the manner of their application and preparation. If they are rotted previous to putting them on the land, as is often the case, to destroy their germinating principles, much of their value escapes by evaporation, in the process ; and if they are put on the land in a sound state, as is also common, they sprout, and thereby most of their substance is rendered of no value to the soil, or growing crop, and they are rendered still less valuable by most planters, by placing them on top of the hills of corn, as if it were for the sun and winds to steal what little substance they may have left. I prepare what seed I have for manure in the following manner, and I apply them to the land that I plant in corn, in the way that I have described for compost. At the end of my gin-house, where I put out my cotton seed, I have a stratum of pond mud placed, about one foot in thickness, on which I put a layer of cotton seed of equal thickness, and so on alternately, a layer of mud and a layer of cotton seed, till all of the seed intended for manure is thrown out, being mindful that the top layer is mud. By this process the germinating principle of the seed is soon destroyed, and no loss of its fertilizing property is sustained, for rise or sink it is caught and held by the mud, and with it carried to the field. Since I have pursued this course of management with my cotton seed, I have had much profit from them ; but previous to which, whenever I applied them to the land in the common way, I found them of no value, except in favourable seasons.

I am sorry that my experience in raising horses, does not enable me to answer your inquiries on that subject in a way that could be useful to your readers. I am now very well fixed for raising horses; and I have commenced the business, with a view of raising blood-horses of the first order, so that in a few years I may have it in my power to give you a communication on the subject.

Very truly yours,

ARATOR.

ART. III.—*The Successful Planter, or Memoirs of my Uncle Ben: By an EDISTONIAN.*

In a very pleasant part of this State, (South-Carolina) is to be seen the plantation of my Uncle Ben. Nature has done much for the neatness and beauty of its appearance; but the industry and management of its owner, has done considerably more. If the painter had designed a picture of rural beauty where every object meets in regular accordance, he could not have found, a more perfect original, than the abode of my uncle. I never visit Industry-Hall, (for this is the name by which his place has been appropriately called) without experiencing the most agreeable sensations. There is about it so much to delight one. Its rich, cultivated gardens, with every rare and valuable plant:—its beautiful groves of venerable oaks—its fields bending down in summer with ripening fruits, with its capacious grainaries ready to receive them—its sleek flocks of cattle, enlivening the surrounding meadows, with the elegant mansion rising up amidst the scene,—contribute to render my Uncle, the successful planter, about to be represented in these pages.

My Uncle Ben had just reached manhood, when his father died. Being an only child, he fell heir to an estate which, to any other than himself, would have been considered small and useless; he, however, thought otherwise, and taking industry and frugality for his guides, he forthwith

resolved to become an useful and distinguished member of his parish.

A few slaves, with a small portion of land, were the materials with which he was to establish this character ; and even with these, he may have easily accomplished his task, had they come into his hands under proper management and direction. But it was not as he wished : his father had been one of your careless good natured gentlemen, who looking upon the world and all its things, in too friendly a light, had at last experienced, what he called "its sad ingratitude." To speak a little figuratively, he had once been at the top of friendship ; but, making some unlucky stumble, he was suddenly precipitated, with none to stop his fall,—without even an extended hand of fellowship. My Uncle was wise enough to see the misfortune of his father, and, learning from his instance, the instability of friendship, he soon came to the conclusion that the doctrine of "hail-fellow-well-met," which his father had so frequently preached, was the surest way to make a man a beggar and a slave.

My Uncle Ben, though he had received a finished education, founded his philosophy not in books, but in his own good understanding ; when, therefore, he looked upon this remnant of a once noble estate, he was not disconcerted, but consoled himself in thinking, that although its better part was gone, it had, nevertheless, taught him a wholesome lesson of experience. Thus did he look forward to the fulfilment of an honorable and useful life. And often have I heard him say, that he felt more real pride in being the artificer of his own fortune, than if, like many of his neighbours, he had found it ready-made at hand.

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The first day of the year that made my Uncle a man, had now arrived. He was sitting in the old mansion which his father had left him, with the Almanac of "*Poor Richard*" in his hand. His eye accidentally fell upon these two lines :

"He who by the plough would thrive,
Himself, must either hold or drive."

"I acknowledge the truth," said my Uncle ; and he transcribed the couplet, and pasted them on the wall, where they may be now seen in his own hand-writing. "Tomorrow, (said he) I commence a new life—its destiny is

important to me, and its proper study shall henceforth occupy my serious attention; 'tis true my possession is small, but other men with not so much, have attained honour and wealth. What then are the obstacles in my way? Nature has presented none—providence has blessed me with strength and understanding. If I fail then, it will be from despondency or sloth—the obstacles are only in myself." Other men would have placed them in the world. They would have looked for them there; and their fancies would have supplied them with a thousand insurmountable difficulties to encounter. The picture of their own invention would have appalled them; and they would have turned from the sight overcome and dismayed. They would perchance, have thrown themselves upon the bed of idleness; and then accused the perverseness or cruelty of fortune. But it was not so with my Uncle Ben. He viewed his situation in a proper light. He saw, that the world was kind enough; and that his own resolution was the agent that would accomplish his success or failure.

"In the first place, thought he, I have too great a dislike for work—I view it as derogatory to my standing. But what is standing, without wherewith to support it? If I pursue this course, I know I must become a mere dependant upon my neighbours. If I discard it, some senseless chaps will laugh; but more will trust and admire my decision." He again read over the couplet on the wall, and resolved for the future to follow its precept. "Next, (thought my Uncle) I have too many who are called *friends*. I must put most of them away; else they may soon suck out my small existence." My Uncle Ben therefore, banished wine, and drank for the future cold water—gave no more dinners—sold his hounds and horse, to one whom they soon afterwards ruined; and supported, with the food, (which only kept them half-starved) four or five prime workers. His friends set him down as a foolish fellow, who intended to become rich and comfortable. My Uncle was content with the reproach; and the day was not long before those very men began to feel, from sad experience, that there was more sense in his conduct than they had anticipated. My Uncle still went on with the system of reform. "There, said he, is an old coach and half-starved horses, which serve but to expose my poverty—I shall sell the coach, and put the horses to the plough, they may then make

something to eat. The coachman and foot-boy, too, shall work." And, in a few days, two ploughs were at work, where before such a thing had never been known. The horses soon grew sleek and fat, and the coachman and foot-boy were equally benefited by the change. His slaves next underwent a review. He found them poor and sickly; and when he came to investigate the cause, old Cudgo made the very significant reply, that—"old Master had never made the servants work, and no corn would grow without work." My Uncle Ben smiled at the truth of Cudgo's remark, and remembering the lines on the wall he soon changed circumstances for the better. He now went through the mansion. He examined every thing—estimated their use and value; and disposed of or retained them accordingly. Some things he, of course kept, as family remembrances; but there was very little left, that could be easily dispensed with. Thus did my Uncle Ben commence his reformation; and our readers will soon learn how steadily he progressed until he arrived at *perfection*.

(*To be continued.*)

ART. IV.—*Observations on the Rot of the Grape, and Grafting of Foreign Vines on Native Stocks: By N. HERBEMONT.*

"Columbia, S. C. Sept. 4th, 1831.

Dear Sir,—I received your letter of the 31st ultimo, and being confined to the house by bad weather, I answer it in spite of my disinclination to writing, lest, by putting it off for a few days, I may neglect it too long. We have had such a continuation of rains and fogs, that the fruit generally has done very badly, and that which did not rot, was almost tasteless. My grapes, of which I had a very great abundance in the early part of the summer, rotted, not only in June, but also at the season of maturity. The great rains caused the skins to burst, and what with the help of the birds and numberless insects, such destruction I

never have seen before, and hope never to see again. This, together with the influence of this enormous load of moisture on my bodily frame, so acts on my spirits as to lower them below par, and exposes me to attacks of the blue-devils.

I would recommend to take up wild vines for grafting, or any other vines for transplanting, as early in the fall as they have lost their leaves, not even minding a few remaining green ones at the ends of the shoots. Shorten them only for the convenience of handling them, and reserve the cutting them off, till you are ready for grafting. I think the part of the top which is left is of service, probably, in helping the growth of young roots during the warm part of the winter. At any rate, it is best for grafting to have a fresh cut, the cleft being then in wood, is more full of sap, which is essential. The flow of the sap is a *sine qua non* in grafting, and without it, failure is, it seems to me, almost certain. If you have an ice-house, I would advise to have your scions for grafting cut off the vines as early as practicable to deposit them in a box or tub filled with *clean* sand, leaving (or not) the upper ends of the scions out, and put the box in the ice-house. If you have not such a convenience, deposit the box in the coldest cellar, or other place you can get, keeping the sand only moderately moist. I say *clean* sand, I only mean moderately so. The object of this is to prevent the scions from getting mouldy, and to keep them from vegetating till they are wanted for grafting, which ought to be as late, *at least*, as when the stocks on which you intend to graft have their buds swelled and ready to burst into leaves.

My mind is also wavering as to the rot of the grapes being in a great degree caused by their proximity to the earth; although I had at one time, as I thought, full and sufficient proofs that they resisted it almost in proportion to their distance from the ground; their being shaded by the foliage was, I considered (and still do) of considerable advantage, provided the circulation of the air is not excluded. My mode of training offered these advantages; for at the height of seven or eight teet, the bearing part of the vines running horizontally, the fruit, by its own weight, hangs down, and the leaves are as umbrellas over them. The sight of vines thus trained and in full bearing is most beautiful, and several of my friends here, as well as myself,

had, this summer, a most splendid show of the kind, till the destruction above noticed made it distressing to look at. My vines that were thus trained, at first resisted the rot almost entirely for several years, whilst the others that had not yet been carried up continued to rot as usual. It is proper also to observe, that vines that are bearing for the first or second time, are, sometimes, almost exempt from the rot, though not always. I am certain, however, that this great curse is caused by the superabundant moisture, which, besides that it affects the grapes directly, gives rise to myriads of insects, which all help in the work of destruction. I am fully satisfied, that during the two weeks preceding the gathering of my grapes, I lost at least one hundred gallons in my garden alone by the rain, and fogs, and birds, and insects. Yet, notwithstanding all this, I made from my garden alone, about two hundred and sixty-six gallons, which is, I think, less than one-eighth of an acre, and this, notwithstanding the rot in the early part of the summer. What the quality of the wine will be, is another affair. I put all my ingenuity to task to make it good; but, if I succeed, I shall be entitled to great credit.

Several of my friends here who train their vines much higher than I do, one of them particularly, (Dr. Davis) have been perfectly free from rot. May it not be that, as they are more in the centre of the town than I am, there is some difference in the moisture of the earth by its being covered with many houses? This is possible, and appears to me at least a plausible argument. As to getting rid of the rot by grafting on the native stock, (I wish I may be mistaken) but I think you will not find this to be the result. The native vines, most of them, make good stock to graft on; but I do not think they are superior to our vigorous, cultivated vines, and I have observed no difference, though I have grafted a great deal on both.

Your article on "caprification," reminds me that I have fig trees, which I raised from the seed of the large, imported figs. They suffer so much in our severe winters, that they have not yet done well. Some of them produce a small fig which does not get soft, but turns blue and drops. One, only, has produced two good figs some years ago; but the tree is in a bad situation, and is not at present thrifty. The figs were not large; green till two or three days before maturity, when they turned of a deep

blue: they were very sweet. Several others have shewn fruit; but they have not come to any thing. It is possible they are only fit for "caprification." They would probably do better in the low country, and if you wish it, I shall, this fall, send you some suckers of them for your and your friends' experiments. I am yours, respectfully,

N. HERBEMONT.

ART. V.—*Observations on the Culture of Fruit Trees in the Southern States; by JESSE BUEL.*

"Albany, N. Y. Sept. 14, 1831.

Dear Sir,—Your favour of the 1st, with a number of your valuable publication, reached me yesterday.

I am personally unacquainted with your climate, and can only reply to your inquiries, as to the varieties of fruits best adapted to it, from the information of others, and by reasoning from analogy. My partner, Mr. Wilson, has spent five winters at Savannah, and is a practical nurseryman and gardener. He thinks the apple does well in proportion as you recede from the coast; that the pear may be made to flourish in almost any location, under proper management; that the currant and gooseberry will not do well; and that the plum grows well in some locations.—The cherry, being generally from Pontus, and ripening its fruit early, I should think would prosper with you.

Your soil, in the low country, I conceive to be generally of two kinds, viz: sea-alluvion, or sand with a partial admixture of vegetable and calcarious matter—and river alluvion, consisting of sand, clay, and an abundance of vegetable matter. The latter is preferable for most fruits, though its location, often flat and wet, is illy adapted to their growth. The apple produces best on a primitive formation, but gives the richest fruit and cider on the transition, abounding in calcareous matter and stones. The pear likes a moist loam, inclining to clay, and the plum

one still more adhesive—the cherry thrives on a lighter soil than the pear, and the peach probably does well with you on your lightest sands. There are exceptions to these rules. The breaking pears, such as the *St. Germain*, &c. do best on a light sandy soil, that is, here they give the best fruit. The same may be said of several apples, as the *Downton* pippin, and those generally containing the heighest concentrated juices.

From these facts I should infer, that for most of your fruits it would be well to prepare a compost of river alluvion, turf, and perhaps a little well rotted manure—to dig the holes for your trees from three to five feet square and eighteen inches deep, and to fill this, when the tree is planted, with the compost; and to give each kind as far as practicable, the soils above indicated. You will find short directions for transplanting, in the catalogue sent.

I suspect two principal causes of failure in your fruit trees, are the want of care in transplanting and the age of the trees you purchase. The peach should be transplanted at one years' growth from the bud, and the apple, pear, plum and cherry at two. Plants of this kind, worked on suitable stocks, are more profitable to the purchaser than large trees, produce good crops sooner and are thrice as apt to live when transported to a distance. I know this will seem paradoxical to men unacquainted with vegetable physiology, yet it is a truth admitted by every experienced nurseryman. A small tree is, or ought to be, taken up with its roots nearly entire; while a large one must suffer a great diminution by the operation. The first, having its organs entire, receives but a slight check in growth by the change. Far different with the large one. For want of the usual supply of sap which the roots supplied, the sap-vessels contract and become callous, the wood becomes sickly for want of the usual circulation, and if the plant lives it seldom ever regains its vital energy. Besides, large trees are often those which have been rejected for years in the nursery, on account of stunted growth or unhealthy appearance, and then sold to the admirers of *large* trees. There can be no imposition in a healthy young tree; while the packing, transportation and prospect of living, give to it a manifest advantage over a large one. For myself I would rather buy of the age I have described, than accept large ones as a gift.

We will deliver trees at New-York for your market, where the order is of any amount, free of charge for remittances, or exportation. Our nursery is new, and the trees are healthy. The roses named in the short catalogue are particularly fine. The classification by colours, I believe, is new, and I think will be of service to the buyer. Our dahlias were selected by an amateur, and cost 4s. sterling, each, in London. They are very splendid.

In regard to the *varieties* particularly adopted to your culture, I don't know that I can suggest any thing satisfactory. The new French and Flemish pears, many of which do not ripen well in the open grounds of England, as well as the French and German apples, I should think well adapted to your latitude. The results of experiments made by your planters, and published in your journal, as to varieties, soils and cultivation, will be best calculated to illicit the desired information. And I perceive, with pleasure, from your journal, that you have correspondents who are abundantly capable of fulfilling those pleasing duties to society.

We have under culture 120 new pears, mostly French and Flemish, and as many new sorts, imported last spring, which will be inserted in our next catalogue, and for sale next year *at the ordinary prices*—as we never charge more for new than old varieties of fruit.

I have penned these remarks in great haste, amidst a multiplicity of employments. I promise myself the pleasure of replying further when the cold drives me from the field. In the mean time I send you three volumes of *Memoirs*, which may afford you an occasional extract for your useful journal; in the prosecution of which I hope you will receive, as you deserve, the support and gratitude of the great agricultural interests of our country.

Very respectfully,

JESSE BUEL.

To J. D. Legare, Esq.

ART. VI.—*On the Culture and Preservation of the Sweet Potato; by AN EXOTIC.*

To "Q in a Corner."

Sir,—You have undertaken the laudable attempt to extract from other men's brains that experience and good sense which too often is interred with their bones—It shall not be so with your humble servant, and what little knowledge I have acquired, is cheerfully at your service, Not having much leisure to write I hope you will excuse the brevity of style with which your queries are answered.

On the 24th of March last I planted a *poor* piece of yellow sandy land which was prepared as follows:—

To each task ten cart loads of marsh-mud were applied taken fresh from its bed, after this was chopped and spread, the sward was listed by the plough, and the mud thus covered, the base of the bed remaining unbroken. About ten cart loads of compost from the pen and stable were then applied upon this list, the alleys then thrown up to the listing by the plough, the bed formed, rather broad than high and finished with the hoe—the trenches were opened about three or four inches deep, potatoes planted in holes about three inches apart. The mode of covering, (which is essential and generally neglected,) was as follows—The *wet* and fresh earth was taken from the centre of the alleys *and not suffered to touch the bed till dropped immediately on the potato:* and in this manner the trench filled up; smoothed and the top patted with the hoe. A hand is usually encamped on the field whose business is to scare crows, take up out-lawed hogs, and all other grabblers and rooters; he likewise picks daily two tasks of grass and weeds on the tops of the beds and continues this till the sides require the hoe; he will thus mind and keep the field clean without other assistance till the crop is laid by, which should be hoed and hauled as the appearance of the bed or season may require, always observe to finish with a hauling. When picking the tops of the beds the earth (particularly if crusty and the potatoes not yet up) should be stirred by the hand.

On digging for provisions, I found those beds from which the vines were not cut produced about two-fifths more than those which had been deprived of vines for slips. The for-

mer produced generally a full grown potato, the latter, the potatoes were more numerous, but not more than half the size; the vines were taken off in June and yet the disproportion continues to this moment; I know of no remedy for the abscission of vines for the second crop or slips. I have heard much of sprouts but have usually failed in experiments with them, the period being with us usually dry and the sun warm, (March April and May.) Experiments are now in progress relative to the various modes of planting the vines. If any thing occurs worthy of notice at the digging of the crop it shall be cheerfully afforded to you.

I prefer digging before a frost and in dry weather, although in the former case the practice is generally not considered as orthodox, but in this communication I offer you experience in place of argument and opinion. The great destroyers of potatoes are heat, moisture, and cold; to guard against these the driest, most sheltered, and convenient spot is selected. If in hills, hoe the grass, then lay a floor of dry pine-trash about two inches thick, place a pole in the centre, and about forty baskets in the hill; then cover with pine-trash, and an abundant covering of corn stalks, to act as rafters and shingles for a *heavy supply of dirt*—cold air, and heavy rains will be thus excluded. The pole can be taken out for another hill, and bark placed on for a top covering, thus will heat escape (which should be permitted,) till the approach of severe frosts requires the bank to be as it were hermetically sealed. If snow falls it should be carefully displaced as soon as the storm ceases. The banks should always be opened at the south for use and immediately closed if the weather is sharp; if wind or rain lessens their covering it should be renewed with a fresh supply of earth.

Gathering in baskets is preferable to carts. The banks must be closed up before night or rain takes place. It is (as food) preferable to steam or boil them moderately, so that they do not break on removing them to the place of feeding, otherwise a great proportion of nourishment will be extracted in the preparation.

You are now possessed of what information I have, and I will conclude with a few remarks. On this poor land, its first year of manuring and with this system, the following observations occurred:—a part of the field, during my absence in the morning at another plantation, was planted by digging the moist dirt from the alleys and on its way up, the

hoe was suffered to *drag the sides of the beds or strike the shoulder before* placed over the potatoes, consequently the dry, dead earth reached the potatoe first, and the fresh moist earth became the top covering; this system was changed as soon as I discovered it, the former came up irregularly five days later than the latter, and have assumed throughout the season the same appearance that all minorities do who have not been rightly dealt with, and have suffered the flowing tide of time irreparably to pass by. They *now* are not as forward as those which were otherwise covered.

We had a regular field, few dearths, early and abundant vines—commenced eating about the twenty-second of July, and have a prospect to last until Christmas—feeding at the same time a large family, and more house-servants than economy would sanction, poultry, fattening oxen and milch cows, have likewise a portion of this crop. I have found cut seed not so early in vines and production as the whole seed. On opening the hills we did not find a peck of rotten, from each hill. The seed came out perfect and instantly were placed in their beds. The potatoes were gathered about the twenty-second of October, not a vine then injured by frost. It is better to postpone planting for a day or two than expose the seed to cold or bleak weather.

AN EXOTIC.

N.B. Fresh, damp mud is preferable in case of dry weather upon warm dry soils, a portion of this crop not muddled was at least three weeks later, although the richness of the land (being an old negro settlement) was the cause of the omission.

ART. VII.—*Some Observations on the Rationalé of the action of Oil on the Fig in hastening its maturity; by Dr. I. A. JOHNSON.*

(Read before the Horticultural Society of Charleston, August, 1831.)

At a meeting of the Horticultural Society in July last, we were highly favoured by the Secretary, Mr. J.D. Legare, with several very interesting experiments instituted by him, shewing, that by applying oil to the aperture at the apex of the fig, it will be brought to maturity nearly a fortnight sooner than it otherwise would do if left to its own efforts.

In consequence of these experiments, a request was made to me to give the *rationalé* of the process; I have, conformably to their wishes, hazarded an opinion, deduced from principles sufficiently established by some of the most respectable Physiologists,* to bear me out in the attempt;—should I fail of success however, my willingness to comply with the wishes of my friends, coupled with a desire to aid in the investigation of so interesting a subject, must be my only apology.

It has been asserted, and with much probability too, that the envelope of every seed, of what form or size soever, is produced from a leaf, which by an inscrutable law of nature, is destined to perform that particular function, previously to its developement; or in other and better language “a leaf forming a carpel or pericarp, may be folded in various ways, either cylindrical or like a cornucopia, or doubled a little convex like a pod, but however diversified the form of the fruit, it results always from the manner in which the leaf was originally budded.”† This is observable in the pod of the pea (*lathyrus*) by careful examination you may perceive that it consists of a leaf doubled upon its upper surface, with its edges soldered together so as to form the pod, the under surface of the leaf now becoming the outer surface of the shell or pod.

It will be necessary here that I should describe the structure of the leaf, in support of what I am about to advance, for which purpose we will select a leaf of the same plant (*lathyrus*). It has a smooth upper surface, and is of a darker green than the under; the under surface is very porous,

* Brown; De Candolle.

† Conversations on Veget. Physiol.

of a rougher texture, pale colour, and for the most part hairy or downy. Between these surfaces we find the cellular tissue traversed in various directions by the fibrous vessels, which form the *ribs* and which from their size produce a great unevenness in the under surface—upon the upper surface also the stomata or mouths of the exhaling vessels open, while the under surface of the leaf is abundantly provided with the stomata of the absorbing vessels; these inhaling *air* and *moisture* from the atmosphere; the upper surface at the same time giving off the surplus fluid, and warmth which is deposited there by the ascending sap; hence leaves have been called the lungs of the plant.

Now, in the pea-pod, these several parts are likewise clearly perceptible, and if separated at its soldered edge, the form of the leaf may be very well recognized; you will now observe that the leaf is doubled upon its upper surface, in such a way as to make the under surface *external*, this being the most porous surface, and that which contains the absorbant vessels—were it otherwise, the fruit would perish. This is the case, not only with the pea, but with all other forms of pericarps, the same is also, in a great measure, applicable to all buds.

Let us now apply these principles to the fruit in question, and although the fig cannot be strictly considered a pericarp, but an expanded receptacle whose hollow is lined with innumerable flowers and seeds, seldom containing both staminate and pistillate flowers, but for the most part pistillate only, in the same fig, having an orifice at its apex or summit, through which moisture and heat are no doubt passed off, yet as a bud it is amenable to the same laws.

Notwithstanding this exception to the above formation of a pericarp, it is still the product of a bud, as I have said and as such, must possess some at least of the properties of a leaf. If this be granted, then it will follow, that if oil, or any other mild application be made to its aperture, so as to include the perspirable fluid, the heat and moisture of which, being thus retained, are thrown back upon the fruit contained within this dilated receptacle, and thus add greatly to facilitate the maturation; but on the other hand, let the oil be applied to the outer surface of the fig, and the arrest of absorption, must prove fatal to the fruit.

In order to establish this proposition I selected several figs, and such as had the oil applied to the aperture only,

matured in ten or eleven days after the application of it, those which were covered with it, wilted and sloughed off by the eighth day, while such as were undisturbed did not ripen for ten or fifteen days after, thus establishing the above theory.

It may not be amiss here to observe in support of the assertion that a leaf may become a pericarp, that a pericarp (or germ) may resume the form of a leaf, as may be seen in *monsters*, such as althia, rose, or gardenia, when very double; in many instances the *pistil** in participating in the monstrosity becomes a *leaf*, while the stamens assume the form of *petals*, such flowers never bear fruit or seed.

I. A. JOHNSON.

ART. VIII.—*An Account of the efficacy of Chloride of Lime in removing the cause of disease, in the Orphan-House, in 1827; by Dr. JOSEPH JOHNSON.*

“Charleston, 26th July, 1831.

Dear Sir,—In answer to your inquiries respecting the chloride of lime, I beg leave to say that in August 1827, I received a note from the chairman of the Commissioners of the Orphan-House, stating that the children in that institution had become very sickly, that some had died with symptoms of yellow-fever—that great apprehensions were entertained for the survivors, and requesting advice as to the best means of protecting them.

Having been one of a committee of the Medical Society, who, through that body in 1827, recommended to the City Council and to the inhabitants the general use of fumigations, in the manner found effectual in the British navy by Commandant Smith—in France by De Morveau—and in different parts of Spain: I did not hesitate to recommend the general use of chloride of lime, then (a new preparation,) acting on the same principles with the fumigations above mentioned. With this recommendation I sent the Com-

* A Pistil consist of stigma, stile, and germ, this latter portion becomes pericarpe as the fruit matures.

missioners of the Orphan-House a keg of chloride of lime, and printed directions for using it. I was much gratified to learn that it was accordingly used throughout the establishment, and that the disease began there, to abate from that period, and finally ceased altogether; while the same disease continued to prevail all around the Orphan-House, and in all that neighbourhood, with increasing violence and mortality.

There was no other way of accounting for this peculiar exemption among the children of the Orphan-House, where it had already become prevalent, except under Providence, to the general use of chloride of lime.

Your's, very respectfully,

JOSEPH JOHNSON.

ART. IX.—*A Receipt for Curing Bacon; by A HOUSE KEEPER.*

Hearing several complaints last winter from good house keepers that their bacon had not sufficiently taken the salt on account of the very cold weather, perhaps it may be useful to revive a practice which our usually warm winters has caused us to forget, or rather neglect; it is, that in severe weather, and particularly when the meat is frozen, to make the salt hot. Put a large pot on the fire with salt in it and stir it often, otherwise it will burn; but let it be as hot as the salters can just bear their hands in, and rub the meat with it well, and pile it or put in hogsheads, by which means it will take the salt well and the saltpetre will show equally all through. This was effectually proved during the uncommon severe winter of 1831, by an old

HOUSE KEEPER.

N. B. If there is a large quantity of meat to be salted, put on two pots with salt, as it ought to be done as quickly and as hot as possible.

ART. X.—*A new method of Propagating the White Lily*
(*lilium candidum*.)

" Cannonsbo' 6th June, 1831.

Dear Sir,—As you know my fondness for Horticultural pursuits, I the more readily communicate to you, a discovery I have made in the course of my experiments, which I think a new one; as I have never met with in the course of my reading, or heard of in conversations, a similar fact,—but, as my researches have not been very extensive, others may have made the discovery, in which case I hope, through the medium of your journal, to be informed; otherwise I shall claim all the eclat from the discovery.

Early in May last, when my white lilies were expanding their blossoms, I found one morning, (lying in my garden walk) a stalk about two feet long, containing three large flower buds, which had been broken short off, just above the ground. Anxious to enjoy the blossoms of so fine a flower, I took it up with an intention of placing it in a flower-pot with water, that they might expand; at the same moment it occurred to me. that if I stuck it three or four inches in the ground and kept it well watered, it would answer the same purpose, if not better. I therefore put it in the earth and kept it well watered, and in a few days had the gratification of beholding the blossoms expanded in all their beauty—

" Observe the rising lily's snowy grace,
Observe the various vegetable race;
They neither toil nor spin, but careless grow,
Yet see how warm they blush! how bright they glow;
What regal vestments can with them compare,
What king so shining! or what queen so fair!"

Like all other beauties they soon began to fade, and shortly after a withered stem alone presented itself to view.

Sometime after I observed the stalk still remaining, and on examination found it retained sap, I therefore let it remain, and now and then gave it a little water, merely to see what nature might perform with it.

On the 5th of June, while strolling about my garden, curiosity prompted me to pull up the lily stock, to see if any thing was going on in nature's workshop, when to my astonishment I found two small bulbs, each projecting fibrous roots, had been formed, and the stalk full of sap. I regretted

the roughness I had used in pulling it up; however I carefully replaced it in a manner most likely for it to succeed, and shall let it remain until the next meeting of the Horticultural Society, when I will send it to you, (as I am not a member) for their inspection; provided the subject shall appear to you of sufficient importance, in either novelty or use.*

Respectfully,
WM. LOGAN.

ART XI.—*Proceedings of the Horticultural Society of Charleston.*

The meeting of the Society in September, was principally occupied with business of a private nature, and we, therefore, passed it over. We now notice such transactions as were of a public nature.

J. B. Van Mons, Esq. of Brussels, was elected Honorary Member, and the Corresponding Secretary directed to communicate it to him.

The following letter to the Secretary was read:

"To J. D. LEGARE, Esq.

Sec'y of the Horticultural So. of Charleston.

Charleston, 29th August, 1831.

Dear Sir,—I send you a few yard beans (as I call them, having forgotten the Spanish name) they are an excellent esculent and prolific *snap bean*,—which I have propagated from two or three seeds. They were given to me about five years ago, by a gentleman from South-America. I had them cooked, and those of my friends who tasted of them found them a delicacy. Thinking that it would gratify the members of your Society to have some new vegetable of local horticultural production, I have taken the liberty to send you a bunch, so that they may be known. The plant climbs upon poles, and bears from the spring until frost; it is well worth cultivating;—it is a light food. When the beans are gathered too young they are apt to be tough; they can be cooked either with bacon, or boiled and eaten with butter sauce, oil and vinegar, or in whatever mode you may choose. Should any gentlemen wish to see the plant, I have some growing in my garden, on the line-street opposite St. Philip's; and any particulars relating to it that you may desire, I will give

* This stalk was accordingly sent by Mr. Logan, and had a number of small bulbs attached to the lower end,—we have before noticed it in the Transactions of the Horticultural Society.—*Ed. So. Ag.*

with pleasure. I have gathered a tolerable quantity of the seeds which I will give to those who may wish to have some.

I am, respectfully yours,

P. JAVAIN."

The Secretary stated that the beans, which accompanied the letter, were received a short time after the last meeting of the Society, and consequently could not be presented to the Society. They appeared, to him, to be a large variety of the asparagus, or yard bean;—he had divided them among some of the members of the Society, and not having partook of them himself he could not state what their good qualities were.

On motion, it was "*Resolved*, that at each meeting of the Society one or more subjects connected with Horticulture, shall be proposed for discussion, which shall take place at the next subsequent meeting. Any member desirous of information shall be at liberty to propose such subjects as he may wish investigated, and any subject not discussed may be postponed from one meeting to another."

In the course of the evening several subjects were handed in, and announced for discussion at the next meeting.

At the last meeting (October 13th) the following letter from the Horticultural and Agricultural Society of Calcutta, was read and referred to the following Committee, viz: John D. Legare, Dr. Henry R. Frost and S. Elliott, to ascertain how far the wishes of that Society can be complied with, and to report what interchange can take place between the two Societies:—

"*To the Sec'y of the Ag. & Horticultural Society of Charleston:*

Sir,—The Agricultural and Horticultural Society of India have directed me to request your kind attention to the present circular.

The Society are convinced that the freest possible exchange of natural productions of every country, will be found in the end most conducive to the prosperity of all; and, guided by these principles, they desire to offer both to Societies and individuals in every quarter of the globe, any of the agricultural or horticultural products of India, or any information relative thereto, which may be desired, in exchange for such as may be forwarded or communicated to them. It will be most gratifying to the Society if you can point out to them any desiderata which can be supplied from India, or if you can by any means forward to them seeds, plants useful communications or suggestions. The So-

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ciety will feel much obliged by your giving every publicity in your power to this communication. I am Sir,

Your obedient humble servant,

HENRY PIDDINGTON,

Foreign Sec'y. Ag. & Hort'l Society of India.

Calcutta, 1st March, 1831 "

The following letter from H. A. S. Dearborn, Esq. addressed to the Corresponding Secretary was also read:

" For Dr. HENRY R. FROST,

Cor. Sec. of the Horticultural Society of Charleston, S. C.

Brinley Place, Roxbury, Sept. 17th, 1831.

My Dear Sir,—I am much honoured by the distinguished attention of the Horticultural Society of South Carolina, and I desire that you would do me the favor of expressing my grateful acknowledgements, to that institution, for the kind manner, in which it has been pleased to notice me.

I am highly gratified to learn, that a spirit has been evinced, in the delightful regions of the South, for extending information in the most interesting, pleasant and useful branches of rural industry. With a rich soil and mild climate, you possess superior advantages, for enlarging the bounds of horticulture. The innumerable plants, which can be cultivated in the open air, while here they require the protection of a green house, offer inducement for experiments that cannot fail of producing glorious results.

It will afford me sincere pleasure, to contribute in any manner, within my power, to the advancement of the objects of your association. If there are any seeds, or plants in this part of the Union, which would be acceptable, do me the favor of naming them, and they shall be sent.

Situated near the two extremities of the United States, the Societies of South-Carolina and Massachusetts, may be reciprocally useful; and I earnestly hope, that by an interchange of good offices, each will better understand local and common interests, be more enabled to promote the prosperity of the whole country, and become as conspicuous for magnanimous efforts to eradicate sectional prejudices, as for a zeal to inculcate, far and wide, a taste for that science and art which they were specially organized to foster and encourage.

As Americans, our objects are national, and as citizens of distant regions of the republic, we may learn from a more intimate acquaintance, the mutual advantages of a friendly intercourse, and be better able to appreciate the character and condition of the people, as well as to emulate whatever is commendable and useful, in each great section of the country.

You will do me a favor, by sending the Constitution and By-Laws of your Society, and the names of the officers, if they have been printed.

With great respect, your

much oblig'd and most ob't serv't,

H. A. S. DEARBORN.

The chairman of the Committee on Vegetables reported a list of premiums to be offered at the general exhibition in May 1832.

A paper "On the insect which depredates on the peach" by the Corresponding Secretary, Dr. Henry R. Frost, was read, and directed to be published in the 'Southern Agriculturist.' A paper was also read by Stephen Elliott, Esq. (selected from the unpublished manuscripts of the late Stephen Elliott) "On the cultivation of the Cherokee or non descript rose, as a hedge plant," which was also directed to be published in the 'Southern Agriculturist.'

The reading of these papers occupied so much of the time of the Society, that on the President's announcing the subjects for discussion, it was resolved that they be postponed until the meeting in November.

Two bouquets of flowers from the garden of Mrs. Wagner graced the table; among which we noticed many most beautiful varieties of single and double dahlias (*Georgianas*) these mingled with other flowers, of great beauty, produced a pleasing effect, and called forth the admiration of many of the members.

Mr. N. Heyward presented a cone of the nut-bearing pine (*Pinus penae*) which was opened and the seeds distributed among the members.

Mr. Legare presented a very large Cape de Verd squash, which had been sent him by Mr. S. G. Deveaux of Pineville. It had been raised on his plantation, in that neighbourhood, and when picked it weighed 68 lbs. and measured 4 feet 5 inches in circumference around, and 4 feet 11 inches in length. The vine from which this had been taken had produced several more of equal size. At the close of the meeting it was cut and divided among the members.*

On motion, it was "*Resolved*, that the thanks of the Society be tendered to Mrs. Cochran, Mrs. Wm. Johnson, Mrs. Backman, Miss Martin and Mrs. Wagner, for the handsome display of flowers with which they have graced each meeting of the Society during the past summer."

* Several of the members to whom it was given have expressed favourable opinions as to its merits for the table. One considered it equal to the common squash, and in taste combining the cushaw with the pumpkin; and by another it was compared to the cushaw, pumpkin and sweet potato united. All concur in considering it as a delicate vegetable notwithstanding its great size.

PART II.

SELECTIONS.

ART. I.—*Practical Observations on the Principles of Breeding.*

[FROM THE AMERICAN FARMER.]

The following remarks on the horse, are such as we have heard from observing farmers of the west ; and to them it may be added, that the bones of high bred horses are of a finer texture, more solid, heavier and stronger in proportion to size than those of common horses, and the animal uniformly more docile and mild, and longer lived. Would it be too much for us to ask a continuation of contributions from our much respected correspondent ?

Fayette County, Kentucky, 1831.

Mr. Smith,—As agriculture is the most universal of all employments, and its prosperity the measure of the success of all other pursuits ; so it may be affirmed that the culture of domestic animals is the most important branch of this great interest, and the one which most perfectly indicates the condition of all its other departments. When we see the beasts that cultivate the farmer's fields, we can form a surprisingly true judgment of the profits of his labours. When we see the fatted animals for his table, or the shambles, we can tell at once his manner of living, and the value of his mode of farming. And so it is through the whole calendar of results.

No degree of skill or attention, will convert a mean animal into a good one. The qualities of the individual, though they may not be as distinctive, are nearly as obstinate as those which separate one species from another. And a man might as well expect by culture to make the obdurate hog yield the exquisite fleece of the Saxon sheep, as to convert the patient and cold-blooded drudge, into the spirited and beautiful courser. We must begin right, or we are obliged to end wrong. We must *breed* with an intelligent eye to the results after which we aim, or all our subsequent labours will fail of their adequate reward.

To that point therefore, *the breeding of domestic animals*, I desire to direct the attention of your readers, as to a thing lying at the foundation of their prosperity. What I have to say, is the result of several years attention to the subject; and though much of it may appear different, from what is commonly received as true, I do not feel at liberty to disregard facts accruing under my own notice, out of deference to any popular opinion. If more numerous and better conducted experiments shall establish results different from those I have arrived at, I am sure no one will receive and act on them with more alacrity than myself.

Every animal in a state of nature produces an animal the image of itself, not only in appearance, but in all its instincts and endowments. We cannot say that one deer is swifter than another of like age and condition, nor that one tiger is more ferocious than another. In a herd of buffaloe you could hardly distinguish one from another of the same sex and years; and in a covey of wild birds the nicest scrutiny will scarcely detect the most trifling difference between any two males or females. It is the same through the whole range of animal life, in a state of nature.

We find it far otherwise in our farm-yards and fields. Between the parent and the offspring, in every species of domesticated animals, there are very great, and frequently so far as we can discover most capricious diversities. This is the very fact which gives to this subject its importance as well as its difficulty. For if domestication had not infringed on nature in this particular, we could not have felt more uncertainty about the produce of our flocks and herds, than about the appearance of the young in a park of deer. We have cultivated away, in part at least, one great law of animal nature; and what we seek is amid the great irregularities which have succeeded to the simple uniformity of nature, to fasten on, and as far as practicable to perpetuate such of them as we find most conducive to our interest.

This has been achieved already to a considerable extent. Men have taken individuals possessing in a high degree certain desirable qualities, and by breeding them together through many successive generations, have succeeded in stamping the original peculiarities in some degree upon the whole family. These are what are called, *blooded animals*; and they are considered purer blooded, or the reverse, as they are more or less capable of propagating young which shall have the peculiarities for which that race may be esteemed.

Whether breeders will take the improvements already made to hand for them, and make the present improved races, the foundation of their own stocks; or whether they will start afresh to go over what the world has been some generations about already, is a thing that each man must decide for himself. For my own part, I prefer the former mode, though the matter is not absolutely clear. For it is undeniable that many of our improved

or blooded racers, as we have them, are liable to great objections; as, for example, the delicacy of constitution found in many--the want of virility in others, besides other objections which I pass over as not being strictly relevant to the matter in hand. I think it certain, that no one race can be said to have been brought to the highest point of improvement; I am sure none such has fallen under my notice. Indeed it is rather surprising to find, that after such great pains have been taken with most of our domestic animals, the best families of them should still be liable to such great diversities among themselves, and should produce so very few capital animals. I doubt whether one thorough-bred out of a hundred, is even a tolerable racer; and probably not one in fifty of those sufficiently esteemed to be trained, would be considered a superior turf-horse. The great scarcity of capital animals in every species, is obvious, from the great value attached to those that chance to be so, and the enormous prices they command.

It must be admitted, however, that the improved racers, as we have them, though liable to serious objections and susceptible of much farther improvement, are out of all comparison superior to what are called the common or scrub breeds. I should consider it nearly impossible to make any of those last named racers better than they are at present, so long as breeders continue to pursue the ordinary system of breeding them together without discrimination or selection. Indeed if the best herd of improved short horns, were turned out with no more care than our grubs receive,—all the females indiscriminately bred from,—the males selected without trial, solely by the eye, and put to service in the herd without reference to age or consanguinity, it would not require many generations for these practices, and others like them, to reduce them to the lowest degree of worthlessness. It would be far better to release them from all interference by man, and permit them to recur by slow degrees to a state of nature—in which you find every thing, always produced in the best possible way, that the circumstances of the particular case will allow of. We may ameliorate the circumstances, and then she produces better; or we may counteract some of her laws, and then she produces monsters—produces nothing—or operates with a caprice apparently endless and inexhaustible.

As a general rule it is certainly true that the produce of any animal is more likely to pursue the qualities which distinguish the family to which it belongs, than those which are more particularly personal to its immediate ancestor. You will be more apt to get good stock from an animal of pure blood, whose family are good, even if he be inferior in qualities, than from the finest possible animal, if he be a chance animal from a low bred and inferior stock. The latter may produce a few young like himself, and they being carefully selected and bred from, may in

time produce a good race, but the most of his stock will resemble his ancestors. I know of no exception to this, where the animal thus superior to his race, is of cold blood. But there are some singular cases of fine animals of a fine race also, that have propagated stock inferior to themselves, and inferior also to their own race. Potomac, one of the best sons of Diomed, and one of the longest lived, never perhaps begot a single horse as good as himself, nor one as good as the average stock of his sire. It will not do therefore to trust to a sire, if he be never so fine, if his family are base. It will not do moreover to rely on the best son of the best sire, till he has proved himself by his offspring.

It is very remarkable, but it is nevertheless a fact, that in some races an animal of pure blood will be more apt to produce young like himself *in appearance*, where the opposite parent is a scrub, than if it also were high bred. It may be that the pure blood of the one parent finds nothing in the mixed puddle of the others to countervail its effects on the young. Or it may depend on some other cause not easily traced. But of the fact, there is no doubt. The next cross, however, will show the cloven foot: and he who relies on such doubtful indications will find at last that he has bestowed his labour in vain. It cannot be too steadily kept in remembrance, that although high breeding is much,—and good appearance is much,—and fine qualities are much, yet to arrive at a reasonable certainty, we must have besides all these, *trial by offspring*, and that where both parents are similar in kind. When all these meet you have all you need desire, and may proceed to select the finest produce and go on with their improvement, instead of seeking out new crosses and uncertain mixed breeds, which in two or three generations may reward you with a total failure.

In relation to crosses, I have found after repeated trials and much observation on many species, that it is not possible to keep up a mixed breed of any kind, without resorting continually to the original families which produced the mixed race you desire to continue. Two half breeds will not produce in the next generation a race like themselves, no matter how nearly the parents may resemble each other. One animal will resemble the remote ancestors on one side, another those on the other. And instead of having, as you may have hoped, a new race of your own, you will have several races, only remotely resembling each other, with this common propensity, that they are all getting worse each generation. Those mixed races in whatever kind of stock, may be easily and certainly continued by resorting constantly to one pure blooded and one scrub parent, or to two blooded parents of different races, according to the character of stock you wish to breed.

As to the degrees of blood required in one or both parents, that of course must be determined by the use for which the pro-

duce is designed. Breeders generally consider seven-eighths nearly equal to full blood; and at fifteen-sixteenth animals are usually accounted full blooded. I very much doubt whether this mode of computation is strict enough. And it seems not improbable, that many of the failures attendant on what we consider thorough breeding may have resulted from the errors into which it has led breeders. The tendency in all such stocks is backward; and they can be advanced only with care difficulty. The consequence is, that it requires a great deal of good blood to work out a very little that is bad. We fall into a great mistake when we imagine, that as at a certain point on one hand the scrub blood will predominate, so at an equal point on the other will the pure blood prevail. It is far otherwise. In the park of a friend in Mercer county, Kentucky, I saw half, quarter, one eighth breed buffalo, on the cow; part being on the short horn Durham. The quarter breed looked nearly as much like the buffaloe as the cow; it was a female and a most beautiful animal. In the eighth breed the buffaloe was still somewhat discernible. But in these cases it was the first and strong outpourings of nature, from a stock that had been bred unmixed in our forests for a thousand generations. Yet even here the pure blood (which I call the buffaloe) was no longer distinct after the third, or perhaps even after the second generation. I specify this case the more particularly, because many persons suppose those two races will not breed on each other, and that has been asserted by some naturalists. I believe the common bull refuses to go to the buffaloe cow, on account of the peculiar stench of the latter; and on the other hand, there are very few cows of the common race that can give birth to a calf begotten by a buffaloe bull, on account of the excessive development of the shoulders and fore parts of those animals. Those difficulties are however sometimes overcome. On the other hand I have seen quarter breed sheep, hogs, and horses, not to mention scores of individuals of inferior species, that had nothing to distinguish them from the most common animals. The most indifferent horse I ever owned, and the vilest looking, was a grandson of the imported horse Eagle, through two scrub mares. The Winter Arabian produced a stock in this state of very peculiar appearance,—all of the same general colour,—generally destitute of the peculiar horny substance which exists on the leg of the horse, on the inside, above the fore and below the hind knees,—and all so much alike, that in four or five years, he begot no colt that could not easily be told by the eye, as of his stock. I had five of his grand colts foaled last spring, and have seen perhaps thirty others, some thoroughbred, some otherwise. The singular resemblance to each other no longer continues in the second generation; the horny substance recurs on the legs; they are of various colours, and in their general appearance there is nothing to distinguish them greatly from

other horses. One of the colts of the second generation, bred by myself, whose dam and sire were both by the Winter Arabian, making the colt possess as much of the blood of that horse, as either of its immediate parents did—was totally unlike the half bred stock. They were all gray and otherwise peculiar, the colt was sorrel, and peculiar in no respect. The colt's mother was out of a mare by Sterling, his father out of one by Spread Eagle—who were brothers; both those mares were sorrels, and the colt somewhat resembled one of them—his grand-dam by the sire. But what is singular is this, the dam of the colt had produced one by Hephestion,—who was sorrel,—which yet was grey, and has been taken by most who saw it for a half bred Arabian; and is greatly more like that stock than his brother, who is more nearly related to it,—but bred from two mixed animals. Animals possessing less than half blood, I should generally consider as having no particular value on account of blood; in other words, animals are not likely to exhibit much of the peculiarity of a particular stock, if they are less than half bred on that stock. I have no idea that you can mix up the blood of six or seven kinds of sheep, cattle, horses, or any other creatures, and thence produce animals having in ratiabie proportion the qualities of all their ancestors. It might be possible in that way, to produce a new race, after much time and care that would equal, perhaps excel any of the old: but the new race would not be in consequence, but rather coerced by the strong hand of cultivation in defiance of the original crosses.

There is not much diversity of opinion as to the ages at which animals should be put to breeding: and it would appear most reasonable that they should first have attained perfect maturity. It certainly injures the appearance of the male of all species to allow them to procreate before their persons are fully developed. With the female I have not observed the same thing to happen; and I have found that the earlier a female produces young, the better milker she generally is. The horse will procreate and the mare conceive at two years old,—sometimes earlier; and some of my best stock has been produced thus. The hog will begin to breed very young,—perhaps at six months old. Their produce begotten, when they are very young are few in number and generally puny. The cow kind will breed at a year old, or a little less; I think at that period, it is injurious to the male, but not so to the female. The most kinds of sheep will produce young at about fourteen months old; the merino has not with me, brought forth under twenty months and generally not till after two years old. I have never known a full blooded merino produce more than one lamb at a birth; while with our common sheep two are common, and I have seen three, and rarely four. I would say that where the females of any kind of domestic animal are intended to be kept as breeders, they may be left to the

guidance of nature, as to the age at which they will commence bearing young; but restrain the male, if possible, till he is perfectly mature, in a great degree at least, if not wholly. Besides, what has been before suggested, favouring this difference in the management of the different sexes, it may be observed that no more is required of the female in a state of domestication, than there would be in a state of nature, which is altogether different in regard to the male.

I am convinced that too much service is required of our males of all kinds of stock. A buck to fifty or eighty ewes, is not less than the usual rate in this country; which is more than double what is proper and what is common in other countries. The finest improved foreign cattle have been brought to their present condition in the hands of persons who let their bulls to very few cows. With us I have known a fine bull serve a whole neighbourhood. After much inquiry I am satisfied that the average get of a stallion, when perfectly vigorous, will not exceed seventy foals of a season. Yet they are frequently let to double and treble that number of mares. Fine stallions, however, frequently have *teasers*; and where that is the case, those who breed from them would lose nothing by taking care that the teaser is not called on for more than his appropriate services. Any one who will take the trouble to examine, may know that nearly all the best horses of other countries have been begotten by sires who served only a dozen or twenty mares during a season. It is much to be questioned if a single capital English horse was begotten, while his sire was standing as a common stallion.

In regard to the proper size of animals I will not say any thing, as that does not belong to the subject I am noticing. The *relative sizes* of the male and female from which you breed, does, however, require notice, and is a subject of great importance. — They should be as nearly as may be of the same size, or if there be any difference, the female should exceed in stature. When the male is much the larger in stature, the progeny will be weak bodied, long necked, and what is called leggy. And since the people have gone wild about tall horses, and large beef and mutton, turn where you will, you see animals such as I have described above. If the male is smaller than the female, the progeny will be compact, heavy bodied animals, with well proportioned extremities; not the most beautiful, but beyond doubt the heartiest and toughest animals in the world. It is to be observed that this kind of stock is produced only when the difference between the size of the parents is not excessive. For I knew an instance of a very small, heavily made, Canadian poney, which was brought to this region, that ruined much stock. The poney paced very well and became celebrated in consequence of having been ridden by a young lady of good family who fell into a rage of love with an old man of some consequence among us, and

eloped with him to his majesty's North American possessions.— The girl was pursued and came back on the pacing stud; whereby he became as notorious as the feat of his former owner. He was about thirteen hands high, and was let to many of the largest mares in the country—many exceeding sixteen hands in height. In the stock thus produced, all the peculiarities indicated above were aggravated to a most unsightly and absurd degree. They were long bodied, lizzard legged, and squat, with diminutive extremities and immense frames, resembling nothing so much as the kind of dog called a bull-fiste. These results may perhaps be accounted for by supposing that when the male is much smaller than the female, the fœtus is smaller than the mother might well nourish, and consequently the central parts become more fully developed, becoming almost a monstrosity, the difference is very great; so when the male is much the larger of the two, the undersized mother is incapable of nourishing the fœtus properly, and hence its extremities become unduly developed. I do not, however, vouch for this, nor for any theory; intending merely to throw together a few important facts.

If I desired to procure an animal of a particular description, no matter what, I would be more particular about its dam than its sire. Injuries from improper service, and service at improper times, frequently befall the male—more rarely the female. Many other considerations will readily suggest themselves, looking to the same result. But over and above them all, I am convinced that the young of all creatures do in general follow more nearly after the qualities of the mother than the father. They partake more of her constitution, of her temper, of all that is good or bad about her. I think there is little doubt that any constitutional ailment of the mother is very apt to affect her young; while there is just as little that any such ailment of the father will not do so, except it be first communicated to the mother. If this be true, it seems conclusive of the other point. My own experience goes in the same way: and there are many recorded facts that I think put the matter at rest, though I do not remember to have seen the inference to which they lead stated, or the law of animal nature which I am recounting urged. I will mention one very striking case. The progeny of Diomed are no doubt the finest horses on the continent; and Archy is the finest among them. The stock of Buzzard are perhaps inferior to few except Diomed, and Hephestion is certainly the best among them. Why is this? Archy and Hephestion are both out of Castianira, who was the best mare ever in this country, and was descended from the best stock ever in England. Every animal she produced was of the very choicest kind. Nor was this absolutely peculiar to herself. Many females of various kinds of stock, have done the same; and very many others have produced superior animals to the extent of half or three-fourths of all their young. The smallest of

these commendations cannot be bestowed on any male that ever lived. I would press this point with the greater earnestness, as I fear it is generally disregarded, if not disbelieved.

There is probably no race of animals among us so perfect that every individual of it is fit to preserve as a breeder. The habit of the country is to make the selection by or before they have completed their first year. This may do with those species that come very early to maturity; but the cow does not reach perfection until its fourth or fifth year, nor the horse probably so soon. With these animals the foregoing practice is very impolitic. The oolt or calf, whose dam suckles best, will by most persons be considered best until it is weaned, and frequently for some months afterwards. Indeed very little can be predicted of them, especially of the former, till they are two or three years old. The most promising when young, often turn out poorly, and the very reverse is as frequently the case. Animals for breeders should never be selected absolutely, until you have allowed them to be old enough to be gentle and used, and if possible, tried also, for that is among the chiefest points at last. With the horse there is a great collateral advantage in this delay; for as the genital organ develops itself very little after emasculation, those who are operated on at an early age, are much the most liable to stranguary and various other kindred disorders.

Some persons consider colour very important in some kinds of stock, and the belief is not uncommon that aslde from the known principles of breeding, there are artificial means by which any desired result of that kind may be rendered probable, if not certainly secured. I have no certain knowledge on this point, nor have I the least faith in the matter.

It has also been supposed, that you can by a particular course of culture, regulate to a great degree the proportion of males and females to which your stock may give birth. It is alleged that under circumstances highly propitious to the increase of any given species, most females will be produced, and under contrary circumstances most males. If this law should be found to exist, it is manifest that we have the matter very much in our hands. I have seen some experiments which render the fact in a small degree probable; but my own experience is against it, and I suppose it will turn out to be merely an ingenious speculation.

The principles here laid down, apply with equal force, whether we adopt the system of remote crosses, or that of in-and-in breeding. I have no disposition to hazard a conclusive opinion on the relative advantages, or the reverse of those much contested systems. It cannot be denied, however, on the one hand, that the in-and-in system will more certainly and speedily stamp any qualities you wish to perpetuate, as constitutional on a race of animals: nor is it to be questioned on the other, that the manner of breeding, if followed up, on near affinities, especially in the

direct line, will weaken the constitution, and affect injuriously the virility of several kinds of animals. It has occurred to me that the true principles on which the controversy will be finally settled, have not as yet been brought into discussion. I incline strongly to the opinion that animals which are by nature gregarious, may be bred with great advantage on principles, which will not do with those that are naturally exclusive in their habits of copulation. Again, it is well known that animals which ordinarily produce several young at a birth, will have of the same litter the offspring of different fathers; whereas, those which ordinarily produce but one at a birth, are frequently rendered temporarily barren by a similar indulgence in promiscuous intercourse. I suspect it will turn out when this subject is fully understood, that these two kinds also require the application of different, perhaps adverse principles of breeding.

R. J. B.

ART. II.—*On Manuring Large Farms.*

[FROM THE AMERICAN FARMER.]

It is a common remark made by farmers of the south, on the subject of manuring, that it is impossible to manure their extensive fields. Why, say they, I have five hundred acres divided into five fields and to think of manuring all this land is out of the question. It would require all my labourers all the year to do so even if I had the manure. But it is impossible to get the manure, and this, if no other obstacle existed, renders it altogether useless to think of it.

The above is a brief but comprehensive view of the arguments used by farmers generally against the system of manuring their lands, and we propose offering a few remarks on the subject to show that they are altogether unsound, and predicated upon most erroneous principles. There are certain fixed principles or rules in the science of agriculture which cannot be disregarded except at the expense of prosperity; and the first and most important one is, that no more ground should ever be brought under tillage than can be cultivated well by the force at the command of the farmer. It is to the neglect of this most salutary rule that all the faults of our agriculture are to be attributed. If a farmer finds that his land is becoming unproductive, and that he is unable to keep it up by manuring, he may be assured that

he is cultivating too much, and his only remedy is to abridge his fields to the dimensions which he is able to manure, no matter how small they may be. If he has a force capable of cultivating one hundred acres in the old way, let him put the whole of that force upon twenty-five acres and pursue a system of high culture. The first year he will probably not make as much as he would have done in the old way on the hundred acres; but the second and forever afterwards he will make more, and this with less labour. As to a want of manure, this is generally imaginary—every farmer by judicious management can get or can make enough for his purpose. He cannot, of course, expect manure to descend upon his land like a shower of manna, any more than he can look for a fine crop of corn without planting; but by proper exertions every farm in the United States can be manured with less expense than the surplus profits arising from the manure would come to. This we sincerely believe, and we have arrived at this conclusion from long and attentive observation. We never yet saw a farm that we could not point to means of manuring and bring into a state of high and profitable cultivation at an expense altogether inconsiderable when contrasted with the advantages to be derived from it. The means of manuring are as various as the soils; but there are some more prominent than others. One source of manure is almost universally overlooked, and that is swamp and marsh mud. Swamps, creek bottoms and marshes, are generally allowed to run wild with bushes and wild grass, and are really so much land subtracted from the superficies of the farm, besides becoming sources of disease, and objects of disgust to good taste. These should be resorted to for manure. The rich mud they contain is a mine of wealth to the proprietor. And yet how universally are they not only overlooked but absolutely, passed by in utter ignorance that they are any thing but a pest to the farm. Select one hundred farmers who have such places on their farms, and ninety-nine of them shall not only consent to sell them cheaply, but shall gladly consent to give their valuable contents to any one that will take them away. There is a piece of land not far from Baltimore, that has been worn out and turned out as a barren old field for ten or fifteen years past, that has a bed of marsh mud immediately adjoining it that would cover its whole surface a foot deep, and render it one of the richest and most valuable pieces of land in Maryland. And yet this valuable piece of land lies utterly neglected and worthless, notwithstanding the means for its renovation are so completely within the power of the owner. We have often looked at this land with astonishment that such a source of wealth should be so entirely neglected. But this is not a solitary case—there are thousands like it.

The gathering of leaves is another source of manure of immense value. Every farmer can manure more or less land by

this means every year. Animal manure, too, is too much neglected, too often allowed to waste its precious substance wherever it may by chance be dropped. There are always persons enough on every farm to collect and convey to an appropriate place every particle of cattle or horse-dung that may be dropped, and this should no more be neglected than the gathering of the corn when it is ripe. Children and infirm persons are competent to this duty and should be kept at it. It is not enough however, to gather this manure—it must be properly taken care of after it is gathered. It should be protected from rain, and be put in such a place as will prevent the liquid that may drain from it from being wasted, for this is its most valuable part. There are many other sources of manure, and we shall occasionally call attention to them; but our purpose now is more particularly to discuss the question of the practicability of manuring at all.

We do not pretend that cultivators of the present immense tracts, can manure all the land they now cultivate; but we contend that they can, and that it is to their interest, to manure some part of it. Whatever manure may be at hand should be applied to such portion of land only as it will manure well. To scatter one hundred loads of manure over a hundred acre field, would be throwing it away. Let it be applied to five acres or even to two acres if the land be very poor; and the next year let another small piece receive the same treatment; and thus gradually bring into a high state of cultivation, a portion of the farm. This would enable the farmer to judge of the expediency of concentrating his means upon a smaller piece of ground. For if he can make five hundred bushels of corn on ten acres of well cultivated land, it is clear that it will be more profitable to him than to make the same quantity on fifty acres; and that he can do so is not a matter of doubt. If farmers generally were to give away three fourths of their land, and put all their present force upon the remainder, they would make money by the proceeding. The evil then, to which is to be attributed the present poverty of the agricultural interest, is not the inability to manure, nor the scarcity of manure, but the attempt to cultivate too much land; which, as we have seen, is a violation of a principle in agriculture, on the strict observance of which the prosperity of the farmer entirely depends.

ART. III.—*Saltpetre on Beef.*

[FROM THE GENESEE FARMER.]

One of our readers has requested us to give information in our paper, how beef can be restored which has imbibed too much saltpetre. In order to comply with his request, it will be proper

to assign a reason why saltpetre is used at all, and then to counteract its effects when too much of it has been used.

It is generally supposed that saltpetre helps to preserve meat. This supposition is not correct; but, on the contrary, it has a tendency to spoil it. Salts are composed of an acid combined with an alkaline base. Common salt is muriatic acid, combined with soda. Saltpetre, or nitrate of potash, is nitric acid, or aquafortis, and potash. To form a salt the alkali and acid combine in certain proportions. These proportions vary in different salts; in some the alkali prevail, in others, the acid. The crystalization does not take place when the two opposites exactly neutralize each other; and although they are commonly called neutral salts, they are not strictly and chemically so—for on applying tests to them, one will show that the acid, and another that the alkali prevails, or is in excess. It is found that those salts only in which the alkali prevails, will preserve meats. Common salt, or muriate of soda, is of this description; but if too much of this salt is used for salting beef or other meats which are mostly what are called lean, the meat will absorb so much of the salt as to become hard and unpleasant for use. Now the saltpetre is used to counteract this effect, for in this salt the acid is in excess; and the same effect would be produced by adding the same quantity of nitric acid or aquafortis to the brine of the meat, that there is excess contained in the quantity of saltpetre used. But this would be a plain case, and every body would say that that would sour and spoil the meat; but by adding saltpetre, the thing is so mystified that they cannot comprehend it—and the love of the marvellous, or what they cannot comprehend, is sufficient inducement with most people to warrant its use. This very relish for what they cannot comprehend, is what keeps half the quacks in our country in bread, and which gives some of them splendid fortunes into the bargain. For instance, who would purchase a bottle of Opodeldoc at the price at which it is sold, if they knew it was only bar soap dissolved in whiskey, and scented with a little ammonia or hartshorn!—and yet such is the fact: or a bottle of *Medicamentum* at the price of one dollar, if they knew it to be similar to a compound tincture of rhubarb diluted with spirits? or a bottle of *Panacea*, at three dollars, if they knew it was only a tincture of sarsaparilla and corrosive sublimate, and that the materials might be bought for three cents. It is the love of the marvellous that makes us use saltpetre for beef, because it will do something to the beef which we cannot comprehend; for no one who tastes it will pretend that it is pleasant to the taste. We do not pretend to know why it was ever introduced for this purpose, but it has gained such reputation, that were you to give a receipt for curing hams without it, it would scarcely be read.

But to the point:—If your beef or pork hams, or any other meats, have begun to sour by the use of too much saltpetre, or

any other acid, correct it by adding to the brine an alkali in sufficient quantity to neutralize the acid. Pearlash or soda, either will answer the purpose—and the quantity necessary may be known by incorporating it with the brine in small quantities, and testing it by dropping into it an infusion of red cabbage juice; if the juice changes to a bright red, the acid still prevails—but if it changes to green, then the alkali is in excess. It would be well if housekeepers would remember to test the brine from their meat barrels often during the warm weather—and as long as the alkali is in excess, there is no danger of meat spoiling; but if the test changes quick to red, the brine should be drawn off and scalded, and a little potash or soda added—sufficient to change the test to a green—when it should be returned to the barrels. The same principle is applicable to pork or beef that has been fed on still slops. In the common process of distillation, the beer or mash runs more or less into the acetous fermentation, and the slops of course contain a quantity of vinegar. Cattle or hogs which are fattened on such food, have a quantity of the vinegar diffused through their whole system. When such meats are packed, the quantity of acid contained in them is sufficient to more than neutralize the excess of soda contained in the common salt, and the whole remains sour, ready for the commencement of the putrid fermentation, which does not take place where the fixed alkalies are in excess. For the want of this knowledge thousands of barrels of pork are lost annually in the United States, and the blame is often attached to the manufacturers of salt, or the superintendents of salt-making establishments, who are as innocent as were formerly those persons who were executed in New England for witchcraft.

If to beef, hams, or fish, people would add sugar instead of saltpetre, they would find the flavor much improved, and the safety of keeping increased.

ART. IV.—*Grafting Walnuts and Chesnuts.*

[FROM THE GENESEE FARMER.]

The climate of the valley of Genesee, is found to be very favourable to the growth of both walnut and chesnut trees, if we are to judge from the growth of those found growing wild in this region, or from those varieties which have been introduced from abroad since the settlement of this country; and some of the na-

tives of our forests will compare with those of the valleys or Ohio or Mississippi, in stateliness and size; thereby giving proof of the congeniality of our climate and soil to their habits.

Most people of observation, who have travelled through the different states, have noticed the vast difference which exists in the quality of the common walnuts, in size and flavour.—Commencing with the eastern Atlantic States, and travelling west, it will be found that the walnut increases in size, but diminishes in flavor; the shell becomes thicker, and the kernels are not as plump. The walnuts which are gathered in the northern part of Ohio, and brought down the canal, to this market, are nearly double the size of those brought from Connecticut, and yet the latter command about double the price of the former. Those gathered upon the Mohawk river are much finer than those gathered in the valley of the Genesee, although the climate here is more mild than upon the Mohawk. Those gathered in the northern part of Ohio, are not so good as either, although the climate is allowed to soften as we progress west in the same latitude.

The difference in the quality of walnuts, therefore cannot be owing to any thing unfavourable in the climate but to the variety of the trees which produce the fruit. The walnut takes readily by grafting or by budding, and any fine varieties growing in the Eastern States may be introduced and continued in this manner.

As the walnut tree lives to a great age, and is not very subject to have the fruit destroyed by insects, we know of no reason why the cultivation of choice kinds of walnuts would not be profitable in this section of country.—We will suppose that one hundred walnut trees would be sufficient for an acre of ground; this number would not prevent the ground from being cropped as in apple orchards. We will suppose that these trees, for the first fifty years, would average half a bushel each, or fifty bushels per acre. The average price for eastern walnuts, has been for the last five years, about one dollar and fifty cents per bushel. This would bring the produce of one acre at \$75, allowing the use of the land for gathering, paying taxes, fencing, &c. Land well calculated for walnut orchards, might be purchased for twenty-five dollars per acre; the trees we will allow to cost twenty-five dollars; and the setting out, staking, &c. twenty-five more amounting to \$75.

Yet we know of land that might be purchased for twelve dollars, which has more than the requisite number of young walnut trees growing upon each acre, which would only require to be grafted, or budded, and the orchard would be formed; and in five years, the produce would be quite considerable, as the operator might select such sized trees as would suit his convenience.

The cultivation of the chesnut, we think would be equally as profitable as the walnut. Although the common chesnut of the Northern States, is a valuable timber tree, yet we are not aware that any attempt, upon a large scale have been made in cultivating the tree for fruit, otherwise than with the common kind. In Europe they have a kind which they call the Spanish chesnut, the fruit of which is four times the size of our common chesnut, of the country. The tree is equally as valuable as ours for timber, and is one of the loftiest trees of Europe. It attains to a great size, as the far famed tree upon Mount *Ætna*, is one of this kind, which is said by travellers, to be one hundred and four feet in circumference.—This kind takes well upon our common tree, as does also the chinquepin of the Southern States, which is rather a shrub than a tree; yet the fruit of it is highly esteemed.

The fruit of the large Spanish chesnut, or as it is sometimes called, the Italian, is in high repute in France, as stuffing for turkies. The fruit is first boiled, the shells taken off, and the farinaceous part mashed with cream, when it is certainly one of the best compositions, for that purpose. We think that the introduction of this kind of chesnut, into our fields, would be a source of profit to the farmer, and gratification to the horticulturist.

ART. V.—*Extracting Sugar or Sirop from Cane-Juice and other substances.*

[FROM THE FRANKLIN INSTITUTE.]

Specification of a Patent granted to CHARLES DEROSNE, of Leicester Square, in the county of Middlesex, Gentleman, for certain improvements in extracting Sugar or Sirop from Cane-Juice and other substances.—Dated 29th November, 1830.

To all whom these presents shall come, &c. &c.—*Now know ye*, that in compliance with the said proviso, I, the said Charles Derosne, do hereby describe the manner in which the said invention is to be performed, by the following description thereof, (that is to say:)—

The invention consists in a means of discolouring sirops of every description, by means of charcoal produced by the distillation of bituminous schistus alone, or mixed with animal char-

coal, and even of animal charcoal alone. Whatever sort of charcoal it may be, it must be disposed on beds very thick, on a filter of any suitable form. The filter of itself has nothing particular, and does not form the object of the patent, because it is already known and used for other purposes, but till now it has not been employed for discolouring sirups. To obtain this discolouration, I put the charcoal in a case, in which I place at a distance of about an inch from the bottom a metallic diaphragm pierced with a great number of holes; I then place upon this diaphragm a clear and coarse linen or woollen cloth, which exactly covers it; I then place upon this cloth a bed of charcoal of bituminous schistus alone, or mixed with animal charcoal, or animal charcoal alone. Whatever it may be, this charcoal ought to be in a state of division, in order that it may be well penetrated with the sirop which is intended to be filtered. Charcoal in fine powder would not be penetrated by the sirop. It has been found that the charcoal reduced to the size of fine gunpowder is very fit for this operation; if the grain is too large, the filtration would be operated too rapidly. I lightly press the charcoal, and then again place new beds of the same charcoal, which should likewise be pressed till it has come up to the height of fifteen or sixteen inches. It may be made higher if found necessary, or it may be less, but the discolouring effect will be always in proportion to the thickness of the bed of charcoal. When the charcoal is disposed to the proper thickness, it is to be covered with another metallic diaphragm, pierced likewise with holes, upon which is spread another clear linen cloth; it is upon this cloth on which is poured the sirop which is destined to be discoloured. The sirop ought then to form a bed of several inches thick, from four to eight, although there is no precise rule. For operating well in the filtration of sirops, the sirop ought to be clear before pouring it upon the filter, and ought to have undergone a first filtration by the known means, the point to be obtained by the filtration through the thick beds of charcoal is only the discolouration of sirops.—The sirop to be filtered ought not to pass over the consistence, which is produced by two-thirds of sugar and one-third of water; but it may be filtered at any less degree of consistency, according to the result required. When the sirop is hot the filtration operates a great deal more rapidly. In operating on a great scale, a reservoir filled with sirop can furnish several filters at a time by means of cock-balls placed in each filter. The first portion of sirop which passes through the filter is always the most discoloured, and by the time the colouring part combines itself with the charcoal, the effect of the last portion becomes less sensible. The portions of sirops which preserves a part of its colour after its filtration, can be passed again upon another bed of charcoal in another filter, and by this means it may be obtained in a great degree of purification. Whatever the charcoal used, it is desira-

ble to mix the charcoal with about one-sixth part of its weight of water before putting it in the filter. The place of that water is occupied by the sirop which penetrates the beds of charcoal, and then the water comes the first; it has a disagreeable and salted taste when the animal charcoal is used, the water after that comes mixed with a portion of sirop, and soon after it is displaced by the pure sirop.

When the charcoal has been deprived of its colouring effect, pour water on the filter for dissolving or displacing the sirop which is mixed with the charcoal, the sirop then comes pure first, and after that mixed with more or less water, using as little as possible of water, it is convenient to suspend occasionally the effusion of water on the upper part of the filter, and to shut its cock. The sirop being heavier than the water, gains the bottom of the filter, and runs first. The sirops made with raw sugar by this process can be made as clear as water. The molasses are deprived of their bad taste, and are converted into a good kind of sirop of a clear and yellow colour. The sirops from which it is desired to separate colouring matter can be obtained directly from the juice of cane, or of beet-root, or from the saccharine matter produced by the action of sulphuric acid upon the farinaceous matters before these juices or liquids have been baked for extracting the sugar. The sirop may likewise be produced by the solution of all kinds of sugar, and of the products of inferior quality, which are obtained in sugar-refining under the name of "bastards," and other sugars. The purpose of producing of sirops may be to sell them in such a state for the ordinary consumption, or to bake them for making sugar whiter than is obtained by the common process, or these whitened sirops may be used for discolouring the refined sugar, in making them filter through the loaves for replacing the use of the earth and water. The object of the invention being to obtain discoloured sirops by the means above described, this discolouration of sirops is always proportionate to their primitive colouration, and to the quantity of charcoal which is used. The carbonization of bituminous schistus has nothing particular; it is produced in close vessels, as is done for producing animal charcoal, only it is convenient, before the carbonization, to separate from the bituminous schistus the sulphurets of iron, which are mixed with it. Instead of using the schistus, or animal charcoal of the size of gunpowder, it can be reduced to a powder still more fine, mixed with sand; in this state a given quantity of charcoal discolours better than powdered less fine, but the filtration is slower and more difficult to be regulated. After having tried this first method, I have given the preference to the other mode, but both of them are the object of the patent.

In witness whereof, &c.

ART. VI.—*Native Grapes.*

[FROM THE GENESEE FARMER.]

Mr. Goodsell—You have travelled in Europe, through the principal regions where the vine is cultivated, and has been, for hundreds of years ; and as I know your attention was fixed upon this culture, it is a fair presumption to suppose you well instructed in it, and a competent judge of the probability of success in this country. Your opinion, therefore, is certainly entitled to great deference, in which I now speak from personal knowledge, and certainly with no desire to pay unmerited compliments, which every man of sense should regard as insults and injuries.

A great question, in my humble opinion, as relates to the immediate prospect of success in the Grape Culture, is likely now to come into discussion, as to the relative value of vines of foreign and domestic origin. In settling this matter, all sorts of feeling will be enlisted, as may well be conceived, and it is not, I think, at all probable, that it will ever be settled, only by public opinion instructed by experience. The dealers in the article, will always be, from the operation of natural causes, most likely to recommend such varieties as afford them the most profit by sales.—This is a natural conclusion, and the public may as well take it into seasonable consideration. The question then is, as to those persons, will they make more, or less profit, by the sale of the vines of foreign countries, or by the sale of those that are indigenous, natives of the region about them ? This is the point on which their opinions will naturally turn. If there are exceptions the instances will be even the more creditable and honourable, for being rare. I have seen, already, enough to convince me of all this, and that it is high time to direct the public attention to the consideration of all the circumstances of the case.

It is worthy of remark, that native vines, by being perfectly naturalized to the climate where they grow, are therefore hardy, and, for the same reason, likely to be healthy. All men, unbiassed by foolish prejudices, will admit this, because obvious to reason, the common sense of every common-sense man. But the objection that will be started, is, that though our native vines may be hardy, capable of being cultivated without covering, and therefore with much less trouble than such as are not hardy, they will only afford fruit of an inferior quality, fit only for the hedge-rows of slovens, and of your coarse-grained sort of folks. I have heard such insinuations, already, and from people that are trying to cut very much of a figure in the very patriotic business of selling foreign vines. Should it be satisfactorily ascertained that we have native vines, now in cultivation, which produce as good fruit as those foreign ones, or that it is likely we may have by-and-by ;

by proper attention, much would have been done towards the success of the experiment upon which the people are now entering. The quality of the fruit of the vine, constantly improves with age, till it attains maturity, a period of many years, in healthy and vigorous growths. We are not to expect therefore, from vines of a few years old, fruit of such flavour, size, and richness, as the same vine would produce at 10, 20, 50, 80, or 100 years old. Let us bear in mind these facts, and persevere in selecting the most promising wild vines, having large and beautiful leaves, and plant and cultivate them in our gardens, training on frames and on arbors, well spread to the sun and weather, and we may soon find, each one of us, varieties well worth attention. Let us also plant every year some ripe grapes, of the most promising appearance, and cultivate the seedlings so produced, about one half of which will be fruit bearers, and we may thus get new varieties, some of which will be of superior quality, and all of them will be hardy, at home in the climate and soil where produced. One healthy, hardy plant is worth a dozen of your green, milky and delicate foreigners, and will bear more surely, every year.

With a view to the course indicated in these remarks, I see with great pleasure the outline of an excellent plan of operations proposed by the Domestic Horticultural Society, of the western part of this State, in the *Genesee Farmer* of September 3, 1831. That plan, in my opinion, is worthy of high commendation, and deserves the support of every lover of his country. I intend to send as proposed, specimens of all my fruit of the native vines, some of which I think will vie with the best varieties from the vines of any country, and thus silence some of the objections that have been raised, and will be urged, incessantly.

AN AMERICAN.

☞ We fully accord with the writer of the above, in his opinion of American grapes, and although the communication was received with the above signature, we recognize the hand writing, and assure our readers it is from one to whom the public are much indebted for useful information. A friend of ours informed us that he lately visited a vineyard which was planted in part with grapes from the garden of this *American*, that in point of quantity and quality of fruit it exceeded any thing of the kind he had ever seen, and convinced him of the superiority of American over foreign grapes when well selected.

ART. VI.—*On Worms, Slugs, and their Destruction by means of Common Salt.*—By C. W. JOHNSON.

[FROM THE BRITISH FARMERS' JOURNAL.]

"Great Totham, Essex, March 7, 1831.

Sir,—A very considerable experience fully warrants me in the assertion, that, if any growing crop of corn, attacked by the worms or slugs, is salted at the rate of six or seven bushels per acre, the destruction of the vermin will be complete. It may be sown by hand, from a common seed basket; and there is not, let the farmer be assured, the slightest danger to be dreaded from the salt injuring the crop, but quite the contrary effect will be apparent. I have seen twenty bushels per acre applied, in March, to a crop of wheat with decided advantage. Neither let the farmer imagine that the use of salt, for that purpose, is an untried scheme. Let him take a single worm, the largest he can find, and put on it a single grain or crystal of common salt; let him do the same by the common slug which haunts his fields; and let him judge with his own eyes of the result,—the vermin will both perish immediately. And, again, let me request him, when he is convinced of the power of salt, not to commit the usual blunder of applying the remedy to the whole field, but let him, on no account, omit to leave a portion of the crop unsalted; and then, the more the worms abound, the greater the number of the slugs, the more will the benefit from the salt be apparent.

As regards its application for wheat attacked by vermin, I will not withhold from the public a communication with which I was favoured from Jacob Busk, Esq. of Ponsbourn Park, in Hertfordshire, February 16, 1831. He tells me—

"It is true that I have lately made a pretty free use of salt, having applied it, in the course of this and the last season, as a top-dressing to nearly two hundred acres of wheat; but my attention has not been particularly turned to what may be called its fertilizing qualities, having chiefly, and almost exclusively, had in view the destruction of worms and slugs, with which the land was very much infested.

"This object is very satisfactorily accomplished. Some small parts of our land are light and sandy, but the generality of it is stiff and strong, well adapted to the growth of beans and wheat.

"In applying the salt, little attention was paid to the quality of the land, nor was the season of the year much regarded; but those times and those spots were selected where the number and ravages of the vermin seemed most apparent, and, in every situation and at every time, the effect appeared equally beneficial.

"A little more experience may suggest some more accurate rule as to season; but I am inclined to think that the earliest

will, in general, be found the best; at any rate I would avoid sowing, if I possibly could, immediately before a fall of snow, as snow produces, on places recently sprinkled with salt, an unpromising appearance, which requires some farther investigation. Perhaps the best mode may be, what we have very satisfactorily, in some instances, tried—to sow it on clover leys, and on the bean stubbles intended for wheat, just before they are ploughed.

“If however, there is some doubts as to the most eligible quality of the land or period of the year, there is none as to the fittest state of the weather and time of the day. An opportunity should be selected when the weather is mild and moist, but not rainy—when the land is damp, but not wet, and salt should never be sown when the sun is shining, but either early in the morning, before it rises, or late in the evening after it has set. Late hours we have always chosen, and, employing our ploughmen or other constant labourers, have got the work performed with a small additional wages, without interrupting at all any other business of the farm. They sow it out of the ordinary seed shuttle, at the rate of about four or five bushels to the acre.—Ten or twelve men, moving at once, get over a large piece of ground in an evening, and are easily drilled, so as to proceed with regularity and despatch, by a little care on the part of the superintendant.

“In the morning, each throw may be distinguished by the quantity of slime and number of dead slugs laying on the ground.

“The finer in grain and the drier the salt is the better. What we have used has been procured from town, at about 10d per bushel, which brings the expense, with carriage and spreading, to about 6s. or 7s. per acre.

“The positive advantage I cannot state accurately in figures, but I am confident it has, in every instance, been considerable, and, in some fields, it has certainly been the means of preventing the total destruction of the crop.”

With regard to salting oats, barley, &c. solely as a protection from vermin, my experience has been very limited; but I have invariably found the effect of the salt to be the same as upon wheat. My valued correspondent, J. Walker, Esq. of Benwell, near Newcastle, in a letter not long since received, says—

“I cannot, however, omit that, last season, the oats in this neighbourhood were much troubled with grub; I, therefore, sowed from six to eight bushels of salt per acre, and my crop was fifty bushels, whilst that of my next neighbour was not ten, per acre.”

And in Oxfordshire, in 1828, on the farm of Mr. John Slater, of Draycote, six bushels of salt were applied by hand to a field of oats much infested with slugs and worms in the month of

April; and, although an adjoining field, equally attacked by the same vermin, had its crop of oats completely destroyed, the salted crop was entirely saved. The after effects, too, of thus destroying the slugs, worms, &c. are very beneficial, for the remains of the vermin absolutely become a manure to the very plants on which they once fed; and the effect and number of such predatory vermin is much greater than is commonly imagined. Unless the crop be partially destroyed, the farmer is seldom induced to notice their ravages, although, in minor cases, the unseen loss is very considerable, and much more important than it is usually estimated.

In a former letter, inserted in your valuable Journal, I, at some length, entered into the question of the advantages of salt as a condiment for horses, cattle, and sheep, either in their corn, or in hay: and for this important purpose, I have the gratification of saying that its use has been steadily increasing, and that too, in all weathers, and in good or in adverse times. As a manure too, I shall on a future day, have to communicate to your readers much that is important as regards its employment as a fertilizer; but that is a question far too important to be made a theme for only a portion of a single communication: and, besides, it is unfortunately for our country, the most difficult branch of the research. As a fertilizer, however, its employment is steadily increasing; and where experience shall have given the farmer still more confidence, it will, I am quite sure, be considered as by far the most important agent in his possession.

In conclusion, sir, let me again implore the agriculturist—whose crops are attacked, or suspected even of suffering, by the worms or slugs—to make a trial of the value of common salt, if it is but upon an acre; and if he attends carefully to the instructions of those whose labours I have reported in this already lengthened letter, he will not only benefit himself, but the land which gave him birth.

Let me also assure your numerous readers, that I shall always be ready to give the most zealous attention to any letters, reports, or experiments, in which I can be of use in this important research. Eleven years have elapsed since my *Essay on Salt* was published; but not a single season has passed away without some additional testimonial to the importance of the subject; and although in this period, I have—in Mr. Curwen, Sir Thomas Bernard, and Mr. Parkes—lost three of my most talented and most zealous assistants, yet still I am proud to say, the use of salt as an agricultural agent, in spite of prejudice and inattention, is proceeding most triumphantly. I would suggest that it would be of incalculable service, at this period of the year, if the local country papers were to quote this letter from your valuable Journal.

PART III.

MISCELLANEOUS INTELLIGENCE.

Fine Animals.—We had the pleasure, a few days ago, of viewing a beautiful short-horn heifer, and two Irish rams, which have been sent out by Admiral Sir Isaac Coffin, as a present to a relation residing in this State. We were unable to learn their pedigree, but were informed that the heifer had been selected from the very best of the short-horn breed, with a reference to her milking qualities, and a more beautiful animal we have rarely seen. The rams are also remarkably fine, and will no doubt greatly improve our stock. Every expense attending them, until their arrival in Charleston, was defrayed by Sir Isaac. This is, we believe, the third present of fine animals, which Sir Isaac Coffin has sent to different parts of the United States. To his native State, Massachusetts, he presented some time ago, a fine bull of the short horn breed, and not long after, a fine stallion of (we believe) the Cleaveland bays. These were placed under the charge of the Massachusetts Agricultural Society, and their progeny are already extensively disseminated throughout that State. Such acts are worthy of all praise, and deserve the gratitude of the agricultural community, for these are not presents, the value of which are transient, but on the contrary, are of a lasting nature; and long after we are gathered to our fathers, the benefits arising from them will be felt and acknowledged.

Orange Trees.—The stems of these trees should be carefully protected in the winter by straw or matting. Trees thus protected have escaped, comparatively, uninjured through the late trying season, while other trees, otherwise as favourably circumstanced, from having their trunks exposed, are either killed, or have their bark splitting and rotting on the south side—the effects of the direct rays of the sun on the bark while frozen. Of course it is injudicious to please the eye by trimming up trees to a height of several feet from the ground, for in ordinary winters the lower foliage would furnish the requisite shade. It is best, however, to provide artificial protection against the chance of such leaf-stripping winters as the passing one.—*Beaufort Gazette*, Feb. 24, 1831.

Tender shrubs, or trees, when exposed to the effects of cold, should have not only their stems, or trunks, protected by bands, but particular care should be taken to protect what is termed the collar, (that part where the roots and trunk join). We refer our readers, for an account of the benefit arising from such protection, to an article, ("On the Protecting the Stems of Fruit Trees,") republished in the first volume of this journal, page 503, and also to another, (on "Late Frosts,") in the current volume, page 102.

Keeping Fruit.—Undoubtedly the best method of preserving fruit for winter, is to pack it down in dry sand. Let the fruit for this purpose be picked before it is over ripe, and spread them under cover for a week or more to dry, after which, let it be packed and kept in a cool place (the lower the

temperature the better, provided it is above freezing point) until within a few days of the time it is to be used, when it should be exposed to the air where the temperature is warmer, so as render it perfectly ripe. When grapes are put down, which are intended to be kept until spring, they should be put in jars which can be covered so as to render them air tight. The best sand for this purpose is clean beach-sand, which is rather fine than otherwise, which should be rendered perfectly dry by being spread upon boards under cover, or by putting it in a hot oven. If pit sand is used, it should be washed before drying, to free it from the fine earth which may be mixed with it. Commence by putting a layer of sand in the bottom of the jar, then a layer of clusters, from which all the imperfect grapes have been separated, then a layer of sand, and so alternately until the jar is full. It should be gently shaken, that the sand may enter and fill all the spaces between the fruit, and then covered air tight, and if all the process has been rightly conducted, they will keep a year. Apples, pears, and quinces, when put down in sand, preserve their flavour better and keep much longer than in any other way with which we are acquainted. And there is one great advantage in it; when one of them rots, if well packed, it does not affect the others. Saw-dust and chaff are often used for the above purpose; but unless there is much pains taken to prepare the saw-dust, it is apt to communicate a bad flavour to the fruit, and chaff, when used, is apt to mould, by which the fruit becomes spoiled. We would remind our farmers that apples sold last June in this market, for about two dollars per bushel, and if they would obtain that price next June, they must prepare for it in the fall. As much depends upon preparing an article for market as in raising it.—*Genesee Farmer*.

Peach Trees.—Mr. B. Nabson of this town, who has devoted much attention to improvements in agriculture and horticulture, has this year raised peaches of a large size, and as rich in flavour as any to be found in the Philadelphia market. His trees are in a poor, gravelly soil, and sheltered from the northwest wind. Peach trees grow too fast in a rich soil, and do not bear fruit. They do best in a warm sandy, or gravelly light soil, protected from cold winds. In the spring, it is believed to be a good plan to throw straw around the roots of the trees, to prevent the frost coming out too soon. After the rising sap starts the buds, a hard frost will kill them and the branches they are on. With proper care, this luscious fruit can be raised by almost every one who has a farm or a garden.—*Kennebec Journal*.

Experiment on Mildew of Grapes—For a particular purpose, soon after the young grapes were set, I loosened some of my vines from the trellis, and let parts of them lie on the ground, so that many of the bunches had the soil dashed over them in heavy rains. *Not one of these bunches has any appearance of mildew*, while on the same vines, at the height of one foot or more, many are damaged by that blight. Several kinds of grapes are included in these remarks, such as the Sweet water, Miller's Burgundy, Black Orleans, Red Colour, &c. I state the fact for the purpose of calling the attention of horticulturists to the subject, before the season for extending such observations shall be past. I have not much to say in regard to the cause. There are some bunches near the ground so protected by the leaves as to have been scarcely soiled at any time, and yet are free from mildew; and so are some higher on the vines. It may be, therefore, difficult to come to any positive conclusion, although the first idea that presents is, that our *calcareous loam* is destructive to the mildew when it comes in contact. We may next inquire whether grapes that lie on the ground are free from mildew in *other soils*? and whether the same result may be expected in other seasons?—*Genesee Farmer*.

Preservation of Fruit.—At a recent meeting of the Horticultural Society, a paper was read, entitled "An account of the different modes of keeping fruit, which have been tried at the Society's garden for the season, 1831." The statement was drawn up at the garden, and enumerated eight different modes; the three best, and most practicable of which were, the covering of the fruit in pure and perfectly dry sand, dry fern, or in a deal box buried in the earth. By any of these modes it was preserved free from shrivelling and any disagreeable flavour; in all, it must be deposited in a cold situation. By the other five modes, although the fruit was preserved in a pretty sound state, a musty flavour was found to be communicated; this was especially the case where oat chaff was the medium.—*N. E. Farmer.*

Improvement of Corn.—The editor of the 'American Farmer,' has been several years in the habit of improving corn by *crossing* different varieties with decided advantage. If he has a variety with small ears, which he deems good in other respects, he plants it in the rows with another kind with large ears that flowers at the same time; and at the time of the tassels appearing, carefully cuts away the male flowers (or tassels) of the large eared kind. By this operation large ears are produced of the small eared kind. There are some kinds of early corn which, though excellent in other respects for green corn, are very much injured by the colouring matter in their red cobs. This he attempted to remedy last summer by transferring the corn from the red to the white cob in the same way, and he thinks with success. He planted some of the red cob Tuscarora, which he thinks the best early green corn, in the rows with the largest eared, white cob, sugar corn he could find, about half and-half. As the tassels of the sugar corn made their appearance, he carefully cut them away, leaving the whole to be supplied by the pollen from the tassels or male flowers of the red cob Tuscarora. The result was he had the Tuscarora corn on the white cob of the sugar corn as he desired. From his experiments the editor concludes, that any variety of corn may be at pleasure thus transferred to the cob of any other variety that flowers at the same time, and that if a large eared kind can be found that flowers at the proper time, the smallest eared kind may be made to produce large ears by the above process. He has not extended his experiments to the improvement of the cob of field corn; but, has no doubt, that by the same process, the thick cob of some kinds may be improved. Suppose the thick cob kind were planted in the row with some other that usually has a small cob, and the tassels of the latter cut off as above directed, would not the desired variety of corn be obtained on the small cob?—*American Farmer.*

Potatoes.—In digging potatoes in fair weather, care should be taken to knock off as little of the dirt as possible, and not to expose them to drying winds and a burning sun. Put them immediately into the cellar and cover them with earth not wet, nor very dry.—*American Farmer.*

Hay.—In Russia it is usual to preserve the natural verdure of hay. As soon as the grass is cut, it is, without being spread, formed into a rick, into the centre of which has been previously placed a kind of chimney, made of four rough planks. It seems that the heat of the fermentation evaporates by the chimney; and the hay thus retains all its leaves, its colour, and its primitive flavour.—*N. E. Farmer.*

Mushroom.—The uses of this vegetable do not appear to be well understood in this section of country. It belongs to the 22d Class (Cryptogamia) and 6th Order. (Fungi) *Genera*, Agaricus; species, *Campestris* L., Gillis pink color, stem white, with volva.

Mushrooms are to be found in pastures during the month of September, and when well prepared are relished by most people. When served up as an accompaniment with beef steak, we consider them a luxury. When boiled, stewed, broiled, or pickled, they are excellent; and from them is prepared one of the finest *catsups* brought upon the table. From the near resemblance which the mushroom bears to the toad stool, which is a poisonous plant, there is a strong prejudice against them with many who are not sufficiently acquainted with them to distinguish between them in all cases.

As the season has now arrived for gathering them we will give such directions as we hope will be sufficient for those who may wish to gather them, to prevent any mistake which might lead to injurious consequences. Those who are not well acquainted with them should select those of middle growth, when they may be distinguished by the following characteristics: The stem white and surrounded with a volva or wrapper a small distance below the top, which should bear a resemblance to an open umbrella. The gills underneath should be of bright flesh, or pink, colour, with a pleasant smell. The small buttons, or young ones, when they first come out of the ground are considered most delicate, but are not so readily distinguished from the deleterious kinds, by those unacquainted with them, as when they are more expanded. On the contrary the deleterious kind most common is of a dingy white, above and beneath, and has a sickly, nauseous smell, sufficient to distinguish it from the other. When gathered, mushrooms should be put into cold water and washed clean from any dirt which may adhere to them, after which, for general instruction, cook them as oysters. — *Genesee Farmer*.

Floating Steam Saw Mills — A correspondent in the American Far writes thus, "my chief purpose in taking up my pen was not so much to our *passer le temps*, on board of this boat where I have two *bons companions*, as to communicate a fact, which I am persuaded many of your readers will learn with pleasure, as it may be regarded of great importance to *land-holders* residing on our numerous water courses in Maryland and Virginia. You must be aware that in many situations there are bodies of valuable timber trees, oak, ash, pine, poplar, &c. which cannot be got to market, but which they will soon have an opportunity of selling to *floating steam saw mill* that will pass along the shores, to *haul on board* and saw up at the rate of 14,000 feet per day, logs that could not heretofore be handled and transported.

Messrs. Boyer & Klinefelter, lumber merchants, on the largest and most respectable scale, have bought the steamboat United States, and will soon have in motion, on board, without any alteration of her machinery, which is of sixty horse power, *four whip saws* that will cut out timber at the above rate. This boat will ply over our water courses, and every species of timber, no matter what may be its locality if it can be rolled to the water side, will be *hauled on board and sawed up as above stated*. Four saws with about twelve hands to attend, well be kept going night and day, and the motion is found to be steadier than that of the common saw-mill. Who can calculate how much has been lost for want of such a convenience—who will say that its establishment is not *one good stride more* in the "march of intellect." — *Amer. Far.*